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US NATIONAL ECONOMIC SECURITY
IN A GLOBAL MARKET

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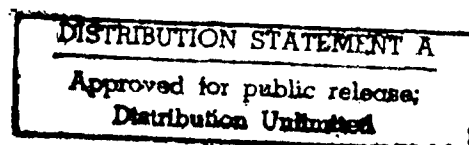
Because of publicity surrounding foreign acquisitions of U.S. firms and landmark real estate, such as CBS, Inc., and Rockefeller Center, our persistence was rewarded by a rapidly growing level of public and scholarly interest in the subject. Articles on foreign investment in the U.S. now appear regularly in the Wall Street Journal, Fortune, Economist, New York Times, and other prominent publication.

While large in scope, the research incorporates macroeconomic, trade, and industrial competitiveness concerns within a national security context. We hope our effort adds value by connecting well-understood economic debates about our nation's welfare to the ways our country formulates national security policy. This paper gathers much of the current thinking in related fields and then presents a method of understanding the larger national security implications. Our research is intended primarily for government officials and industry executives interested in gaining a broad understanding of this issue. It is designed to provide a generalized way of thinking about foreign involvement and is not, therefore, an empirically based piece of econometric work. Admittedly, a few experts may find some retelling of old tales here, while others may gain new insight.

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LTC Raymond A. Gauger
LTC Randy C. Hinds
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The views expressed in this paper are those of the authors and do not necessarily reflect the official views of the United States Government, the Department of Defense, the US Army, the US Air Force, or Harvard University.

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CONTENTS

List of Figures and Tables.....	iv
Foreword.....	v
Executive Summary.....	vii
Chapter	
1 Introduction.....	1
2 Foreign Investment in the United States.....	13
3 Foreign Sourcing.....	45
4 Risk Management and the National Security Dilemma.....	87
5 Conclusions and Recommendations.....	129
Appendices	
A Critical Technologies.....	143
B Export Administration Act of 1990.....	151
Works Consulted.....	165
About the Authors.....	175

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LIST OF FIGURES & TABLES

<u>FIGURE</u>	<u>TITLE</u>	<u>PAGE</u>
1-1	What Americans Tell Poll Takers.....	6
1-2	Taking Stock in America's Manufacturing.....	7
2-1	Foreign Assets in the United States.....	18
2-2	Foreign Direct Investment in the US (1970-88).....	19
2-3	Foreign Direct Investment in the US (1970-88).....	20
3-1	Foreign Sourcing: Key Terms & Relationships.....	54
3-2	Foreign Dependence.....	56
3-3	Level of Agreement.....	59
4-1	Trade-offs Between Foreign Involvement and the Financial Risk to Investment Capital.....	88
4-2	Trade-offs Between Foreign Involvement and Risk to US Autonomy.....	89
4-3	Trade-offs Between Foreign Involvement and Risk to National Security.....	91
4-4	The Efficient Set of Portfolio Investments.....	94
4-5	The Nikkei and the Dow.....	120
5-1	OSTT Organization Chart.....	132
5-2	OSITT Organization Chart.....	134

TABLE

III-1	Critical Technologies and their Objectives.....	52
III-2	PGM's Examined.....	62
III-3	Source Countries for PGM Components.....	63
III-4	Joint Logistics Commanders' Study Systems List.....	64
III-5	Systems Dependant on Foreign "Chips".....	65
IV-1	Japan Puts Money in Wall Street Firms.....	118

FOREWORD

When first announcing our intention to research and write about this subject, we met considerable resistance. For a number of reasons, our skeptics felt that little of value could be added to the topic. Their traditional notions of the defense industrial base were narrowly focused on weapons arsenals, long-lead stockpiles, ammunition plants, and other purely military concerns -- all of which had already been researched in great depth. Because of publicity surrounding foreign acquisitions of US firms and landmark real estate, such as CBS, Inc., and Rockefeller Center, our persistence was rewarded by a rapidly growing level of public and scholarly interest in the subject. Articles on foreign investment in the US now appear regularly in the *Wall Street Journal*, *Fortune*, *Economist*, *New York Times*, and other prominent publications.

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Cambridge, Massachusetts

May 1990

EXECUTIVE SUMMARY

HISTORICAL PERSPECTIVES ON US NATIONAL SECURITY

After World War II, America embarked upon an unparalleled drive to rebuild most of the civilized world in its own democratic image. America entered the atomic age with an expectation that it would remain the preeminent economic and military power in the world. The 1960s were marked by tremendous technological invention and utility. It is clear now that much of the technological leadership the United States enjoyed was transported to other nations to reconfigure their economic and political structures in such a way as to make another global conflagration unthinkable. By the mid-1980s, some US dollars were not just dollars, but became Euro-dollars and world stock and capital markets had become inextricably linked.

As America enters a new decade, perhaps never in its history has it faced a more hopeful, yet disquieting period. The cold war gave us nearly a half-century of relative peace while promulgating an insidious preoccupation with armaments and a loosely defined sense of what was national security.

Descriptions of interests that comprise our national security are loose and open to bias. What is and is not an issue that affects our national security can be segmented into culturally

based arguments of US self-interest and those arguments based upon a global market of trading nations more freely competitive and fluid than before. The range of ingredients comprising national security issues is varied and includes such activities and forces as foreign aid to the Third World, the new round of General Agreement on Tariffs and Trade (GATT) negotiations, and economic aid to Poland. While these are among many elements that comprise the national security concerns, they are outside the scope of this paper.

The specific focus of this paper is on foreign involvement in our national economic security. It argues for a more comprehensive understanding of the depth and nature of the penetration of our nation's economic infrastructure by foreign businesses. Our purpose is to uncover any compelling evidence about its effects upon our national security and to provide appropriate remedies.

FOREIGN INVESTMENT

Foreign investment in the United States is reaching new highs and is troubling to many national security analysts. New foreign direct investment is particularly noticeable in the manufacturing sector. Public concern for the increasing level of foreign acquisition of US assets is raising the ante in Washington for protectionist legislation. Also, the growing linkage of world capital and financial markets and the large holdings of US securities by foreign firms and governments raises some additional national security implications.

FOREIGN SOURCING

The US is becoming increasingly reliant on foreign sources for the products and technology used in its defense systems. While offering certain advantages, this dependence also increases our vulnerability if the supply of those products or technologies is interrupted or denied to the US.

OBSERVATIONS AND ANALYSIS

The changing nature of the global marketplace should cause profound changes in traditional ideas of national security. New notions of national security must consider the well-being of American industry throughout the breadth of competitive markets. Coordinated government policy should encourage US firms to compete in global markets. American companies must receive incentives that encourage joint research and development, the sharing of product and process ideas, and the innovation that breeds competitive advantage over foreign rivals.

We recognize foreign involvement to be a necessary and even helpful national asset. Conceptual models for understanding how foreign involvement can be managed to achieve the optimum balance between risks and rewards are presented. However, the data needed by policymakers to determine the appropriate mix of foreign involvement is not now available.

We paint a picture where foreign involvement is a positive element in an active strategy to promote long-term American competitiveness. It is this competitiveness that determines

whether the existing level of foreign involvement is harmful or beneficial.

RECOMMENDATIONS

We prescribe remedies that we believe will have a positive effect upon our nation's ability to secure its future within a global market. One integrated economy means some level of foreign involvement in the defense building process is a given and not a debatable issue.

The following policy recommendations are offered:

- ♦ A presidential statement of policy is needed.
- ♦ The concept of economic security must be given more weight or greater consideration within the national security community.
- ♦ Government and industry should recognize that national competitiveness is a national security issue.
- ♦ While there is a labyrinth of organizations that address small parts of the foreign involvement issue, there is no single integrating force to push this problem into the national security arena. A Cabinet-level department should be created, whose role would evolve from the following precepts:
 - ♦ reform the entire process by which the US controls technology.
 - ♦ refocus our understanding of technology policy in an integrated perspective that better reflects the role economics plays in national security.

- ♦ reflect the role of government to foster industrial and technology competitiveness as the foundation of our national economic strength.

This agency must develop a comprehensive database and an analytic capability to evaluate the relevant foreign involvement data. It should also coordinate the following types of policy changes across all appropriate agencies:

- ♦ relaxation of antitrust laws to permit much broader and more collaborative research, development, testing, and even production/marketing agreements within industry groups.
- ♦ renewed emphasis on investment tax credits for joint venture arrangements with foreign firms and for both commercial and military research and development (R&D) efforts undertaken in the US.
- ♦ formation of consolidated US trading companies to promote penetration of overseas markets.
- ♦ identifying and recommending educational and worker-training improvements that will enhance the productivity and competitiveness of the American workforce in attracting investment resources.

A FINAL THOUGHT

Virtually every source consulted during our research has concluded that the US must reduce its budget and trade deficits, increase domestic savings rates, give incentives to investment in commercial and military R&D, relax or revise existing antitrust

laws, rebuild our national transportation infrastructure, and perhaps most importantly, improve the education and productivity of American workers. Without timely attention to these and other macro-level economic issues, the structural and policy recommendations outlined in this paper will afford little hope of preserving or improving our collective well-being.

CHAPTER 1

INTRODUCTION

The United States is the only major Western industrial democracy that has no explicit or implicit policy guiding foreign ownership of defense companies. We have let financial considerations override any special consideration for the role of the US defense industrial base in our ability to defend ourselves.¹

Bernard L. Schwartz

Harbingers of American economic decline in the 1990s point to the increasing loss of American industrial autonomy to foreign interests as an ominous threat to our national vitality. Prescient men such as the late publishing magnate Malcolm Forbes; the Chief Executive Officer of Loral Corporation, Bernard Schwartz; and New York investment banker Felix Rohatyn think we are succumbing to the charms of foreign investment more characteristic of the Trojan Horse than the Statue of Liberty. What these and other prominent business leaders worry about is the lethargic state of US competitiveness and the opportunistic acquisition of US assets by foreigners.

¹ Bernard L. Schwartz, "Foreign Ownership of US Defense Companies: Where Do We Draw the Line?," Army Aug. 1989: 29.

US National Economic Security

This paper focuses on foreign involvement as an element of our national economic security. In so doing, we establish a case for more fully integrating national macroeconomic, international trade, and traditional military analysis into the broader context of our national security. Admittedly a broad subject, it is exactly the breadth of the issue that is part of the problem. Whereas normal treatments of national security topics consider economic and competition variables as nearly passive ingredients in the mixture, we view these national assets as interactive elements of a total system. As such, foreign involvement in our defense-building process should be considered only within the broader context of our nation's ability to create and sustain its competitive advantages across the entire spectrum of commercial enterprise.

Symptomatic of the anxiety surrounding foreign investment, Japan is a convenient whipping boy for much of what the American public believes is wrong with the US economy. We do not intend to indicate that Japan is an exclusive case. The problems that we will address in this paper are not caused by of the Japanese or any other particular nation. They are problems of our own making. As we will point out, problems exist on the macroeconomic level, the industrial competitiveness level, the government organization level, and the government-to-industry relationship level in this country. It is clearly the combination of all these problems that puts the US in the position where we become such an obvious target of other nations. By using Japan in a comparative role, we hope to

reveal the severity of the broken linkage between traditional notions of the defense industrial base and a broadened understanding of national economic security.

Many believe world macroeconomic instability in the late 1970s and early 1980s contributed to the large US budget and trade deficits. This linkage also accounted for the large capital flight from less developed countries into the stable dollar. As oil-based revenues helped to keep the dollar strong and the level of real US interest rates remained negative in the early 1980s, the US economy continued at an expansionary pace. The level of government expenditures and the lack of household savings continued to fuel the US economy. As nominal interest rates began to rise, the US dollar continued to remain strong and federal budgets deficits began to grow alarmingly large.

With the purchasing power of a strong dollar and low levels of domestic savings, foreign imports flooded US markets. By 1985, pressure was mounting to devalue the US currency. Many analysts believed that a lower value of the US dollar relative to other currencies would immediately result in much larger overseas sales by US companies. However others believed that such a focus only masked deeper issues of basic product quality, management initiative, and other fundamental competitiveness issues.

After meetings of the G-5 (Group of Five leading industrial nations) in September 1985, the dollar was jointly manipulated by the central banks to a lower level in order to help decrease the large US trade deficit. Some reduction of the trade deficit

materialized, but the more significant effect was the resulting devaluation of US assets. However, by 1987 the 'trade-weighted value of the currencies of our other major trading partners had fallen more against the dollar than the dollar had fallen against the Japanese yen.² This effect offset much of the gain sought from the devaluation. Debate still rages over whether the dollar is correctly priced. Some evidence shows that it still is not at its theoretical level of purchasing power parity.

While the trade deficit showed little significant change, the now cheaper American assets and plentiful foreign capital prompted increased foreign investment in the US. The US has always been a magnet for foreign capital, offering stability and comparatively attractive rates of return, both in equity markets and in US Treasuries. However, during the past decade, the US has become increasingly reliant on foreign capital to help fund our trade and budget deficits, which have been largely resistant to the (limited) policy efforts undertaken by the government to reduce them.

Primary Concerns

The US has always been an open haven for foreign investments, just as American firms have invested heavily overseas. There is nothing inherently wrong with foreign investment per se; however, it is the accelerating pace and nature of foreign acquisitions of US assets by wealthy foreign firms and individuals that is causing great concern to the public (see figure 1-1).

² D. Olivier, Wall Street Journal, 30 Jan. 1987: 22.

For instance, in 1988, 203 US manufacturing concerns were either partly or wholly purchased by the Japanese; these acquisitions bring total Japanese ownership of US manufacturing companies to 890. In total, the number of acquisitions by foreigners in 1988 alone reached 646, worth nearly \$60 billion, almost doubling the yearly average since 1985. Although in the recent past the British have been the main investors, the Japanese will probably surpass them in 1990 (see figure 1-2).

Are we in danger of losing our national autonomy, specifically our capacity to defend ourselves? Where within our bureaucracy does someone actively monitor this nation's accelerating rate of foreign investors, sources, and joint ventures? Is there serious effort being made to balance short-term economic gains with long-term national security needs? These are the questions we will consider in this paper.

Economic Globalization: A National Security Challenge

In the past, national security has been defined and managed from primarily a traditional military orientation that emphasized policies to protect our nation from external invasion or nuclear attack. Today, the threat is more from an increasing loss of economic infrastructure and an inability to compete effectively in world markets. Our eroding manufacturing industrial base and technology advantages present some enormous problems for the US. Allowed to continue unchecked, these problems mean we will no longer be an economic superpower and, most importantly, will become

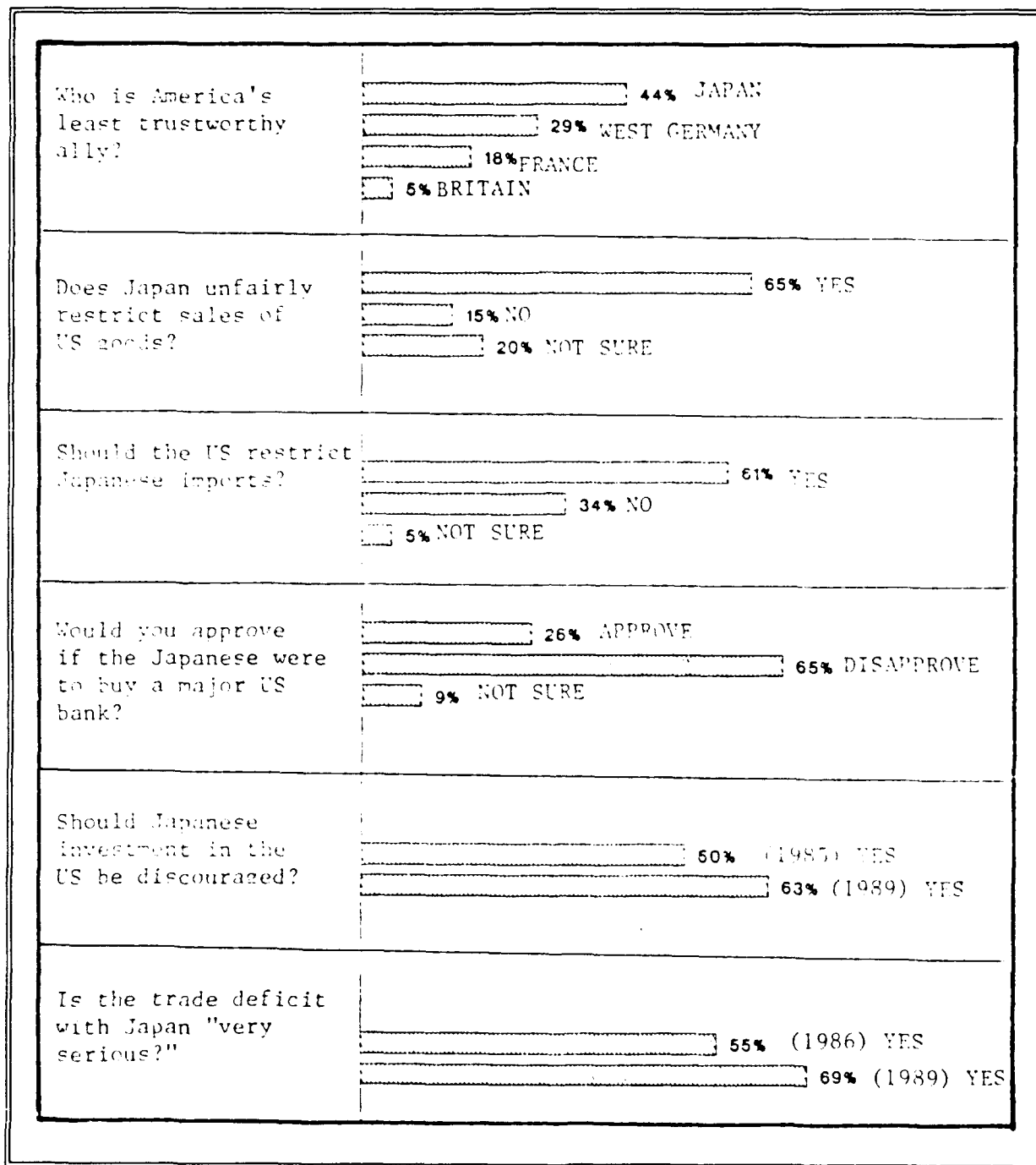


Figure 1-1: What Americans Tell Poll Takers
Source: "Fear and Loathing of Japan," *Fortune* 26 Feb. 1990

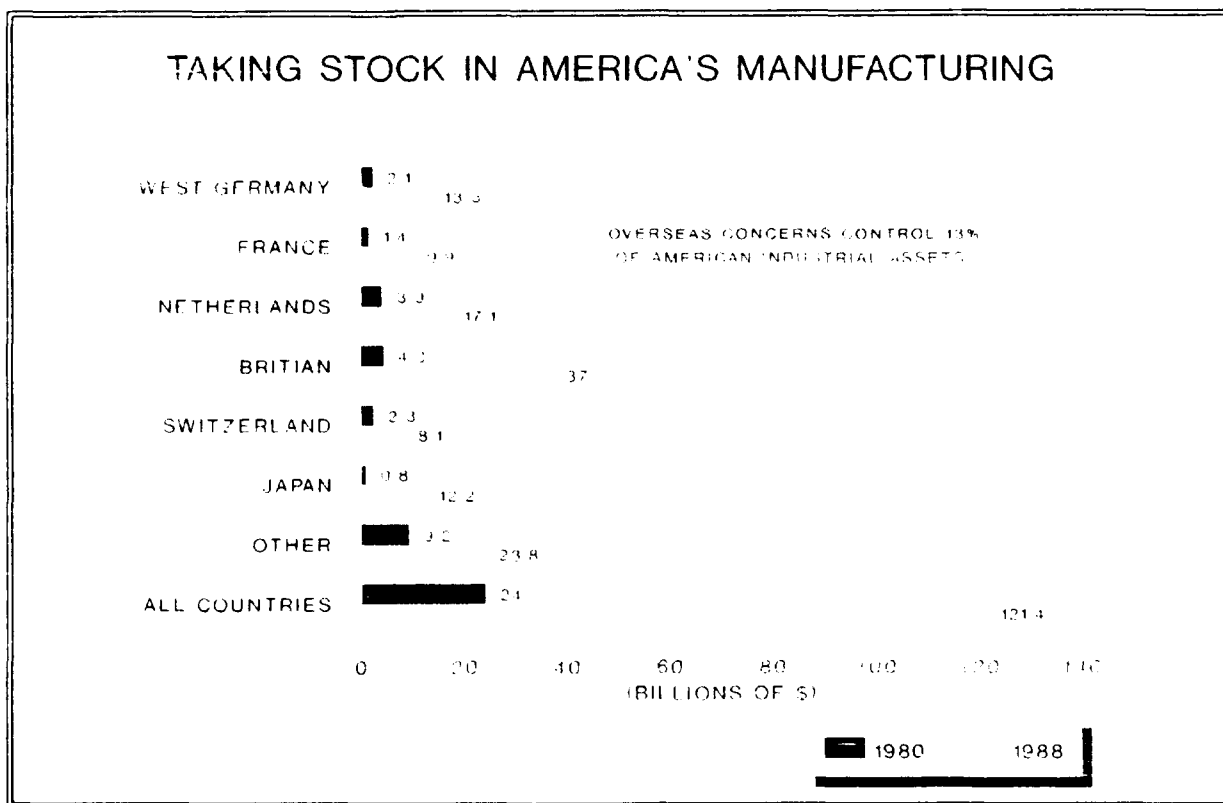


Figure 1-2: Taking Stock in America's Manufacturing
Source: US Department of Commerce and US News & World Report

incapable of sustaining the well-equipped, high-technology forces so essential to our policy of deterrence. However, we believe that the origin of products and technologies used to satisfy US defense needs is indeed an issue for concern, not because of any nationality or racial bias, but because where production takes place, who controls the process, and who possesses the leadership in defense-related technologies are all matters we consider vital to our national security.

Harvard Business School professor Michael E. Porter believes that nations proceed through a life cycle where the last stage in

a period of decline is one of wealth dissipation.³ Porter and others characterize the US in the 1980s as entering this period of atrophy and waste. The trends are not irreversible and nations can reinvigorate their economies, but innovation and a national sense of quality must permeate a nation's industrial fabric or the decline becomes inevitable. The convolution of US global competitiveness issues with the health of the US defense industrial base frames the context within which the debate about foreign involvement must be scrutinized.

We agree that America stands for freedom. It stands for the "free flow of goods, services, capital, people, and ideas around the world."⁴ But we also believe that those flows must be monitored to ensure they are working in our collective best interests and not the vested interests of only a few. This is where the linkage between national security and economics begins.

With the dawning of Europe 1992 and the emergence of Japan as a major economic powerhouse, the linkage between US economic and national security is more apparent than ever and vulnerable to the vagaries of international competition.⁵ Although there are many ingredients in the national security matrix, foreign ownership of US assets is emerging as a troubling symptom of a potential

³ Michael E. Porter, Competitive Advantage of Nations, (New York: Free Press, 1990).

⁴ Lewis S. Richman, "How America Can Triumph," Fortune 18 Dec 1989: 66.

⁵ Europe 1992 is the common name for a plan to integrate the European Economic Community (EEC) into one large combined marketplace.

American vulnerability to our competitor's burgeoning economic prowess -- a threat that could uproot the foundation of American strength.

This implied vulnerability connotes the ability of external entities to coerce the US, either covertly or overtly through market forces, into actions that are not in its long-term interests. It could also mean an inability of the US to cope with exigencies that directly threaten US interests. Some worry that the integration of world capital markets, for instance, means that organized US exchanges could be manipulated by unfriendly interest groups; such groups could capitalize upon or precipitate panics like the October 1987 and October 1989 stock market crashes. The 1988 Presidential Commission on Market Mechanisms points to a lack of liquidity in the market, wholesale misunderstanding by the majority of market participants, and other technical trading factors as key components in the nearly \$1 trillion loss during the 1987 debacle on the New York Stock Exchange.

Developments in Eastern and Western Europe presage many opportunities and risks for the United States and its trading partners. While capital flows freely across borders with the dollar as the reserve currency, increasing liberalization of Japanese markets may provide new pressure to supplant the dollar with the yen. Should Japanese government policy prove less accommodating to US deficits, we may find ourselves witnessing an economic instability that does threaten our national security interests. Increasing numbers of people understand the perilous

nature of our current fiscal and industrial plight, yet movement towards a remedial policy is imperceptible. Are we witnessing, in our time, another instance of what Barbara Tuchman identified as perils of governmental folly?⁶ Do we not know, in fact, that there are Greeks inside the horse?

Are we advocating a managed economy or a national industrial policy? Perhaps a national strategy for industrial competitiveness and security is a better description for what amounts to a grand sense of what ought to be our government's primary objective; it is a systematic attempt to understand world events and how our free enterprise legacy for invention and growth can fit within it. The government currently exercises its right of oversight in a host of arenas, including antitrust statutes, securities regulations, aviation safety, and communications. By exercising a vigorous watchdog function in overseeing the nature and specific targets of foreign involvement, the government would be performing its historic duty to promote the national welfare.

Primary Methods of Foreign Involvement

This paper will discuss the two primary methods of foreign involvement in our defense-building process (chapters 2 and 3).

- ♦ foreign investment, both portfolio and direct
- ♦ US dependency on foreign sourcing and joint ventures

⁶ Barbara Tuchman, To March of Folly, (New York: A. Knopf, 1984) 1+.

The first method is through the purchase of securities and the controlling interest in a US defense firm. The second method of involvement is through foreign capture of the supply chain through what we call the foreign sourcing of defense systems, subsystems, and component parts.⁷ Included is a brief treatment of joint ventures/multinational arrangements where the US co-produces or licenses equipment destined for use by our national defense agencies. A discussion of the nature of this involvement, existing US policy and law concerning each kind of transaction, and an assessment of the benefits and ill effects of dependence on foreigners in each of these areas is presented.

Analysis and Prescription

Chapter 4 offers a generalized appraisal of the threats posed by foreign involvement, various policy prescriptions, and recognizes the need to reorient our national security concerns more towards an economic threat. A rationalized policy model to correct the deficiencies in our current economic/national security strategy system is presented in the final chapter.

⁷ Throughout this paper we use the term "component parts" to denote defense systems, subsystems, and traditional component parts.

CHAPTER 2

FOREIGN INVESTMENT IN THE UNITED STATES

It has always been a maxim of politics ... that the more foreign countries which any nation can interest in the prosperity of its own, so much the better. Where the treasure is, there will the heart be also; and, therefore, when foreigners vest their money with us, they naturally invest their good wishes with it; and it is we that obtain an influence over them, not they over us.⁸

Thomas Paine, *Common Sense*

Since the beginning of the Republic, foreign investment has played a major role in the development and growth of the United States. Foreign investment helped finance the Louisiana Purchase in 1803; European money helped finance the construction of the Erie Canal and other waterway systems; and it contributed significantly to the development of a national railroad network in the 1850s. In addition, foreign investment was instrumental in bringing about the rapid industrialization of the United States during the second half of the 19th century.⁹ Throughout the 20th century, the United States has continued to encourage foreign investment and free trade as a means of bolstering the economy and obtaining capital.

⁸ Department of State, "Foreign Direct Investment in a Global Economy," 1989: 8.

⁹ Mark L. Hanson, "The Regulation of Foreign Direct Investment in the United States Defense Industry," Northwestern Journal of International Law and Business 1989: 660.

However, since the late 1970s and throughout the 1980s, foreign investment in the United States has increased at what some perceive to be an alarming rate, raising fears we are essentially "selling off America."¹⁰ Foreign penetration of the US economy, especially in certain key areas of the defense industry, is raising concerns that there is a continuing erosion of control over decision making and technologies that are crucial to the creation of national wealth and power.¹¹ Thus, this trend of increasing foreign investment has caused many leaders in government and industry to wonder if our national security could now be jeopardized. This is attributed to the potentially adverse impact increasing levels of foreign investment can have upon the independence and strength of the US economy in general and the US defense industrial and technological base in particular. This chapter will analyze the extent and ramifications of foreign investment in the United States, concentrating primarily on national security concerns relating to the defense-building process.

DISCUSSION OF THE FOREIGN INVESTMENT ISSUE

The United States possesses one of the most open investment policies in the world. From its very origins, the United States has followed the laissez-faire doctrine in its approach to inward

¹⁰ Thomas Omestad, "Selling Off America," Foreign Policy Fall 1989: 119.

¹¹ Omestad 119.

foreign investment. This philosophy was clearly stated in 1791 when Alexander Hamilton wrote in the *Report on Manufacturers* that foreign investment "ought to be considered as a most valuable auxiliary, conducting to put in motion a greater quantity of productive labor, and a greater portion of useful enterprise, than could exist without it."¹² Almost without exception, every recent presidential administration has continued to promulgate this open investment philosophy. One of the clearest pronouncements on US policy came from the Ford administration's Council on International Economic Policy:

The basic thrust of US international investment policy is to encourage the free flow of capital as a means of maximizing the operating efficiency of the world economy. In accordance with this general principle, we admit foreign investors freely; we give them equality of treatment with domestic investors once they are established here; and we offer no special incentives and impose few barriers. The few restrictions we have imposed are well known and generally accepted abroad. We have opposed any attempts to add to the list of existing restrictions as unjustified by economic analysis -- a position we will continue to adhere to unless it becomes evident that a particular measure is necessary on ground of national security or to preserve our essential national interests.¹³

¹² Norman J. Glickman and Douglas P. Woodward, The New Competitors (New York: Basic Books, 1989) 256.

¹³ Glickman and Woodward 257.

The investment policy of President Reagan's administration was set forth in his speech on 9 September 1983:

A world with strong foreign investment flows is the opposite of a zero-sum game. We believe there are only winners, no losers, and all participants gain from it.... Foreign investment flows which respond to private market forces will lead to more efficient international production and thereby benefit both home and host countries.¹⁴

From all indications, the Bush administration will continue to support an unrestricted open investment policy.¹⁵ Consequently, this policy, coupled with a variety of market factors that enhanced the attractiveness of the US economy to investors, has resulted in foreign investment growing during the 1980s at a much faster rate than was typical for the preceding 50 years. However, before analyzing the extent of foreign investment, it is necessary to define what we mean by foreign investment.

Types of Foreign Investment

Foreign investment is comprised of portfolio investments and direct investments.

Portfolio Investment. This consists of the foreign ownership of bank accounts, securities, and bonds of US companies or government

¹⁴ David C. Mulford, testimony, Committee on Energy and Commerce, US House of Representatives, 20 Oct. 1987: 22.

¹⁵ On 3 March 1990, during the press conference after the US-Japan Trade Summit in Palm Springs, California, President Bush stated that he supports foreign investment because "it means jobs, jobs for Americans." The statement was in response to a reporter's question on how he feels about current levels of foreign investment in the US.

securities such as US Treasury notes. Portfolio investment is passive in that foreign investors do not control the companies or organizations in which they invest. Their purpose is to diversify their assets and to invest their cash so as to gain the best rate of return for a given amount of risk. However, even though portfolio investment is passive in terms of direct control, it can be very active and have a significant impact on the capital market due to the highly liquid nature of the investment. In the world of computers and electronic transfer, huge amounts of funds can shift among investments and in and out of markets almost instantly. Given certain circumstances, this can result in either positive or negative actions of significant magnitude in the capital market.¹⁶

Foreign Direct Investment. This involves the purchase of a controlling interest in an American company or real estate by a foreign entity. Specifically, the International Investment Survey Act of 1976, 22 U.S.C. 3101-3108 (1982), defines direct investment as "ownership or control, directly or indirectly, by one person of 10 percent or more of the voting securities of a corporation or the equivalent interest of a non-incorporated enterprise, and includes ownership of any type of property, including real estate." The intent is to obtain some form of control over the firm so as to participate in management operations, share in profits, and influence both short- and long-term corporate strategy.

The Extent of Foreign Portfolio Investment. Total foreign investment through the second quarter of 1988 exceeded \$1.6

¹⁶ Glickman and Woodward 5.

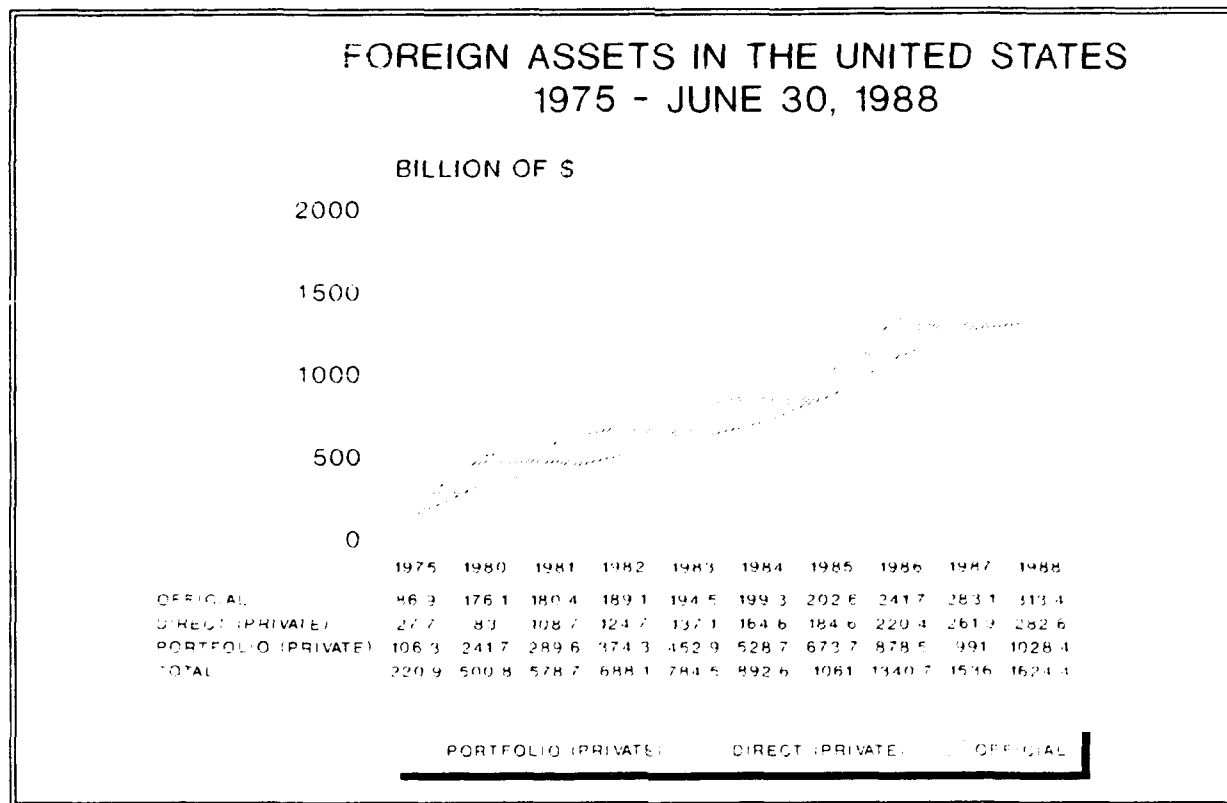


Figure 2-1: Foreign Assets in the United States

Source: Elliot Richardson's Testimony, US House Committee on Foreign Affairs, Foreign Investment in the US, 22 Sep. 1988.

trillion dollars. Private portfolio investment made up the largest share of this total, exceeding \$1 trillion dollars, or 63 percent of the foreign investment in the US as of 30 June 1988. The remaining dollars were included in the categories of foreign official assets and foreign direct investment. Figure 2-1 shows that private portfolio investment has grown almost tenfold since 1975.¹⁷

The Extent of Foreign Direct Investment. In 1971, foreign direct investment in the United States (FDIUS) stood at \$14

¹⁷ "Official assets" consist of both portfolio and direct investment assets by foreign governments.

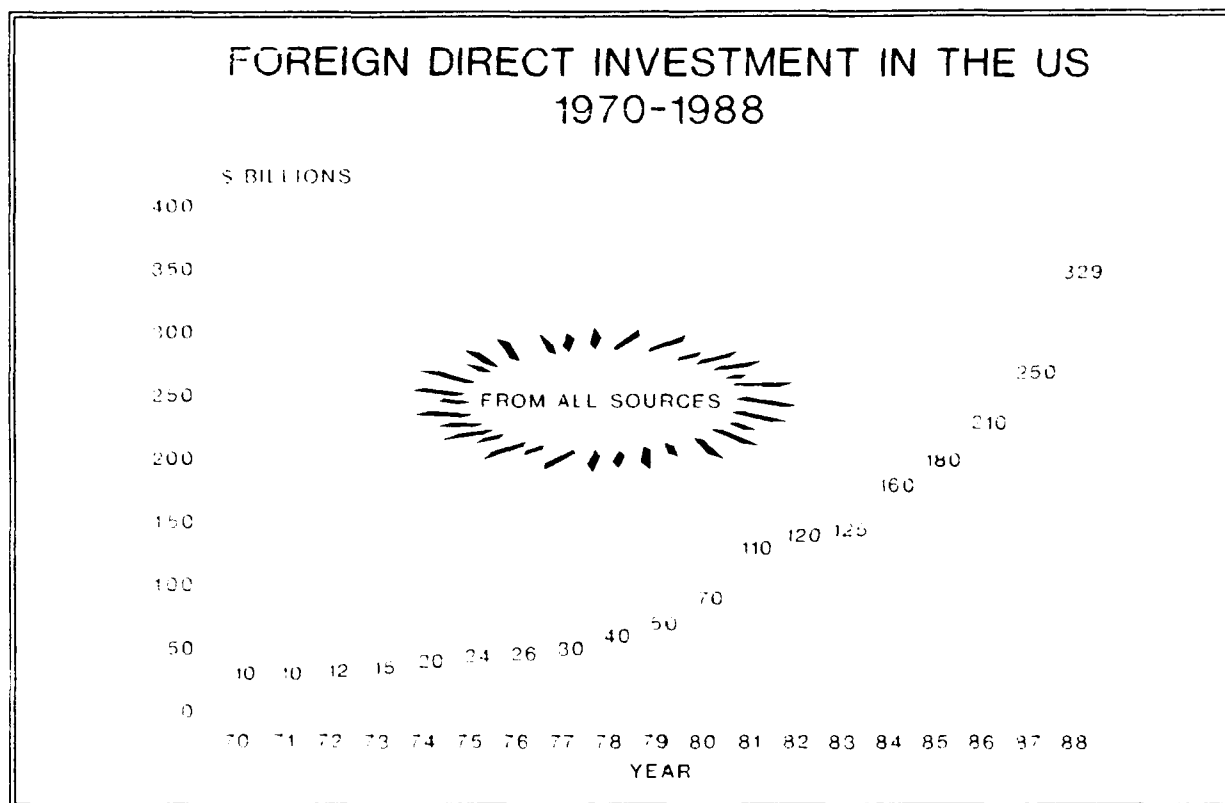


Figure 2-2: Foreign Direct Investment in the US
Source: US Department of Commerce

billion. In 1980, it reached \$83 billion, and by 30 June 1988, \$282.6 billion. This is a twentyfold increase since 1971 and greater than a threefold increase under the eight years of the Reagan administration. It is estimated that foreign direct investment reached \$329 billion by the end of 1988, which would mean that FDIUS increased 24 percent in 1988 alone. Figures 2-2 and 2-3 depict the growing trend of foreign direct investment since 1970 in dollar volume, by major country. The top direct investors in the United States until 1987 were the British, followed by the Netherlands, Japan, Canada, and West Germany. By 1988, the Japanese had surpassed the Netherlands as the second largest investor according to recent Commerce Department statistics.

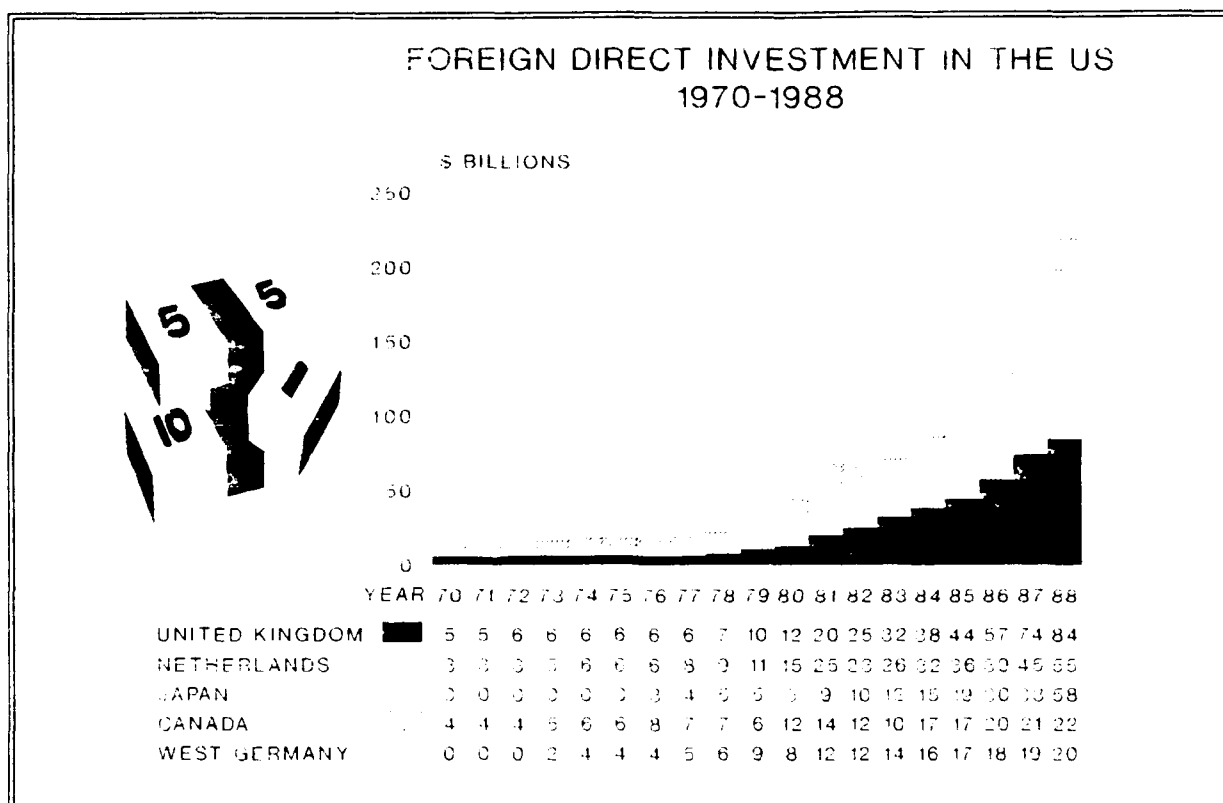


Figure 2-3: Foreign Direct Investment in the US
Source: US Department of Commerce

Current US Policy, Laws, & Regulations Affecting Foreign Investment

The United States subjects foreign investors to fewer regulations and controls than any other major industrial nation. Essentially, foreign investors must comply with the same laws and regulations as domestic investors. But there are some special regulations affecting foreign investors and certain restrictions on investments in industries considered essential to national defense. The areas with certain restrictions on foreign investment are

- ♦ banking
- ♦ exploitation of natural resources
- ♦ energy, especially nuclear materials
- ♦ transportation

- ♦ communications
- ♦ maritime industry¹⁸

Current policy and regulations affecting foreign investment will be discussed in two categories: general investment regulations that consist of antitrust and securities laws; and laws, regulations, and programs that restrict foreign investment in the defense sector.

General Investment Laws

- ♦ *Antitrust laws.* Foreign investors who enter the US market or attempt to acquire a US business must comply with United States antitrust laws. These laws date back to the 1890s and their primary purpose is preventing unfair practices such as collusion or other forms of monopoly that would serve to weaken or attempt to undermine competition.¹⁹
- ♦ *The Clayton Act:* Section 7 of the act prevents foreigners, either singularly or by collective action, from acquiring or even participating in a merger or joint venture with a US firm if the result will substantially lessen competition or tend to create a monopoly. If the proposed mergers can be expected to result in unreasonable restraint of trade or an illegal attempt to monopolize a market, then the proposed merger or acquisition can be prevented under either section 1 or 2

¹⁸ Hanson 662.

¹⁹ Hanson 662.

of the act.²⁰

- ♦ Federal Trade Commission Act: Section 5 prohibits the use of unfair methods of competition by both foreign and domestic firms.²¹
- ♦ Hart-Scott-Rodino Act: This act requires that a foreign investor must notify the Department of Justice and the Federal Trade Commission of an acquisition of 15 percent or more of the voting securities or assets of the proposed acquired entity, or an aggregate total amount of voting securities or assets of the acquired entity in excess of \$15 million. These agencies have a statutory time period in which to investigate and determine if the transaction complies with antitrust laws.²²

Securities and Disclosure Laws

- ♦ Securities Act of 1933 & Securities and Exchange Act of 1934: These acts require that a foreign corporation intending to issue securities in the US or obtain a controlling interest in a publicly held US company disclose the fact of significant foreign ownership or control. The intent of the laws is to promote full disclosure of information, prevent fraud and manipulation of stock prices, and preserve the stability and

²⁰ Hanson 662.

²¹ Hanson 662.

²² Hanson 662.

orderliness of the stock market.²³

- ♦ Foreign Investment Study Act of 1974, Public Law 93-479: This law directs the Secretary of Commerce to conduct overall studies of foreign direct investment and the Secretary of the Treasury to conduct studies of foreign portfolio investment in the United States.²⁴
- ♦ International Investment and Survey Act of 1976, Public Law 94-472, 11 October 1976, and amended Public Law 97-33, 7 August 1981: This act requires the President to establish regular and comprehensive data collection and analysis programs, to include conducting surveys, under the auspices of the Secretaries of Commerce and Treasury, to collect and analyze foreign direct and portfolio investment. The law directs that they publish reports and studies and conduct benchmark surveys of foreign direct investment every five years. In 1981 the act was amended to allow a one-time exception for the benchmark surveys to be conducted seven years from the last benchmark survey in 1980.²⁵ Consequently, the last benchmark survey was conducted in 1987.
- ♦ Domestic and Foreign Investment Improved Disclosure Act of 1977: This act amended the Securities and Exchange Act of 1934 in order to require greater disclosure by foreign investors

²³ Hanson 663.

²⁴ Martin Tolchin and Susan Tolchin, Buying Into America (New York: Random House, 1989) 275.

²⁵ Tolchin and Tolchin 275.

holding over five percent of specific securities listed in the act's section 13(d)(1). This amendment requires the reporting of the residence and citizenship of the person reporting and the nature of any benefit from ownership of the securities.²⁶

Regulations and Programs Affecting Foreign Investment in the US Defense Industry. Investment in the defense industry is one of the few areas where foreign participation is restricted. With the exception of the Exon-Florio amendment to the Omnibus Trade Act of 1988, which will be discussed later, Congress has not passed any specific laws or regulations pertaining to foreign investment in the defense industry. The lead has been taken by the Executive Branch, which has developed a series of regulations and procedures that both evaluate and restrict, if required, foreign investment in order to protect national security.²⁷

The Defense Industrial Security Program. The Department of Defense (DOD) itself has no specific authority to deny a foreign investment. However, it does have the authority to influence foreign investments, particularly in the case of firms performing classified work under contract to the Department of Defense.²⁸ This is provided for under the Defense Industrial Security Program. This program began in 1965 and established procedures for the

²⁶ Hanson 664.

²⁷ Hanson 664.

²⁸ Stephen D. Bryen's testimony, US House Committee on Banking, Finance, and Urban Affairs, Mergers and Acquisitions--Foreign Investments in the United States, 21 Oct. 1987 (Washington: GPO, 1988) 42.

granting of security clearances to defense contractors owned or controlled by foreign investors. The Defense Investigative Service (DIS) has responsibility for running the program.

The primary intent of the security program is to ensure that no contractor can gain access to classified information unless the contractor's facility has been granted a security clearance equal to the classification of the material to be disclosed. In addition, no subsidiary company may obtain access to classified information unless the parent company has an equal or higher clearance than the subsidiary.

Clearances can be granted only to firms organized and existing under US laws. Investigations are conducted of contractors seeking classified contracts and any firms found to be under foreign ownership, control, or influence (FOCI) are not eligible for a clearance. The determination of FOCI is a subjective analysis that consists of evaluating the following factors:

- ♦ Is there foreign direct or beneficial ownership of five percent or more of a firm's securities?
- ♦ To what extent do foreign interests hold management positions or control or influence directors, officers, or executives of an organization?
- ♦ What is the extent of a company's contracts with or indebtedness to foreign interests?
- ♦ Does it have income from foreign interests that exceeds 10 percent of its gross income?
- ♦ Is there any other evidence indicating the capability of a

foreign interest to control or influence management or operations in order to obtain access to sensitive information?²⁹

If the investigation finds FOCI, there are certain mechanisms that DOD can employ to protect US security interests while permitting a desired foreign owned company to perform classified work:³⁰

- ♦ The foreign owner's voting control can be placed in the hands of trustees not affiliated with either company. This prohibits the management of the company by the foreign owner.
- ♦ The portions of the company that perform classified work could be spun off into a separate subsidiary. This subsidiary would be a US company solely responsible to a US proxy holder. It would be completely independent from the parent foreign company and eligible for classified work.
- ♦ If the US has a reciprocal industrial security agreement with the country of the foreign owner/investor, then certain foreign personnel can be cleared for some levels of classified work. Currently, the US has agreements with Britain, Canada, and the Federal Republic of Germany.³¹

In the situation where a firm consists of 51 percent US ownership and 49 percent foreign and the 51 percent is controlled

²⁹ Hanson 666.

³⁰ Bryen's testimony 44.

³¹ According to Headquarters, Defense Investigative Service (DIS), there are fewer than 10 agreements involving voting control and 23 agreements involving US proxy holders for foreign owners now in effect.

by one US entity, the firm can be cleared for classified work. The foreign member can have representation on board of directors, but cannot control the board. In addition, the foreign personnel cannot have access to the classified information.

Thus, the Department of Defense has adequate authority to control foreign investment in defense companies and protect sensitive and classified information. Again, it has no specific authority to block an investment, but it can discourage it by denying a security clearance and thereby making the investment less attractive because the target company would lose its defense contracts.

The Committee on Foreign Investment in the United States (CFIUS)
and the Exon Florio Amendment

The Committee on Foreign Investment in the United States (CFIUS) was established by President Ford in 1975. It was created largely as a result of public concerns over growing foreign investment in the 1970s. Consequently, a review of foreign investment was undertaken through the Foreign Investment Study Act of 1974. One conclusion of the study was that foreign investment was not sufficiently monitored. Thus, President Ford created CFIUS and gave it the authority to review foreign investments that might have major implications for national security.³² CFIUS is authorized to analyze foreign investment trends, provide guidance on consultations with foreign governments on foreign governmental

³² Hanson 669.

investments in the US, and evaluate proposals for new legislation and regulations relating to foreign investment.³³ However, CFIUS was not given any authority to approve or disapprove specific foreign investments. It can only recommend to the President that an investment be blocked.

CFIUS is an interagency committee consisting of the following members:

- ♦ Secretary of the Treasury
- ♦ Secretary of Defense
- ♦ Secretary of State
- ♦ Secretary of Commerce
- ♦ Attorney General
- ♦ Director of the Office of Management and Budget
- ♦ the United States Trade Representative
- ♦ Chairman of the Council of Economic Advisors

In 1987, the debate over the Fairchild-Fujitsu case made Congress and the general public more sensitive to the issues of foreign investment and national security.³⁴ In reviewing the acquisition, CFIUS and the other interagency groups discovered that the only way the President could block a foreign acquisition or

³³ Stephen J. Canner, "US Investment Policy and Exon-Florio," Lecture, 25 July 1989: 3.

³⁴ The Fairchild-Fujitsu case involved the attempted acquisition in 1987 of Fairchild, a semiconductor company, by Fujitsu, a Japanese electronics giant. Basically, the national security debate centered around fears that if Fujitsu were allowed to acquire Fairchild it would obtain key semiconductor technology, possibly break up the company, and reduce the US domestic production base for microchips that might be needed in a national emergency.

merger was to invoke the International Emergency Economic Powers Act (IEEPA). The IEEPA may be used if there is an extraordinary threat to national security, foreign policy, or the economy. However, for the President to invoke this act he must declare a national emergency. This requirement to declare a national emergency made this act impractical for use as a means of blocking sensitive foreign acquisitions or mergers during peacetime and especially when the investor is an ally.

Consequently, to resolve that dilemma, Senator Exon and Congressman Florio proposed an amendment to the Omnibus Trade Act of 1988. Their amendment was accepted and became section 5021 of the act. The provision provides the mechanism to investigate mergers, acquisitions, or takeovers of any US domestic corporation by a foreign investor and gives the President authority to suspend or prohibit a transaction if it could endanger national security.³⁵

The President may exercise this authority only if he concludes that the following criteria exist:

- ♦ Existing authorities and legislation (antitrust, export control, defense security regulations) are insufficient or inappropriate to protect national security.
- ♦ There is credible evidence that the foreign entity exercising control may take action that threatens to impair the national security.³⁶

³⁵ Hanson 674.

³⁶ Canner 4.

This additional authority has enhanced CFIUS's role in reviewing foreign direct investments. Now all foreign acquisitions that might have an impact on national security must be reported to CFIUS, although this reporting, called notification, is voluntary. CFIUS then processes the proposed acquisition or merger through its review system.

The law provides for a 90-day review process. It consists of 30 days for general evaluation to determine whether to investigate, 45 days to investigate, and a final 15 days for the President to act.³⁷

As stipulated in the Exon-Florio amendment, the President cannot block a transaction under this authority unless existing laws and regulations are inadequate or inappropriate to protect the national security. Therefore, CFIUS must review the existing laws and regulations and determine if they are applicable to a particular transaction. If they are, then CFIUS could recommend several policy options. If the transaction threatens competition, CFIUS could recommend that the antitrust laws be used to block the transaction. It can recommend actions under the Defense Security Program if the transaction will result in unauthorized access to sensitive or classified information. Under extraordinary circumstances, CFIUS could recommend that the President use the International Emergency Economic Powers Act if the threat to national security were severe.³⁸ Finally, if no existing laws or

³⁷ Canner 5.

³⁸ Hanson 670.

regulations are adequate, CFIUS can recommend that the President block the transaction.

During the Reagan and Bush administrations, CFIUS has reviewed approximately 200 cases, investigated 6, and recommended that President Bush block 1 -- which he did.³⁹ This is in stark contrast to the CFIUS record under President Carter's administration, where CFIUS reviewed only one transaction.⁴⁰ Thus, with the authority granted under Exon-Florio Amendment, it is fair to conclude that CFIUS is becoming more active and influential in its capacity as the primary government agency responsible for balancing foreign investment against national security concerns.

THE BENEFITS OF FOREIGN INVESTMENT

The United States is attractive to foreign investors for a variety of reasons. The US has one of the most stable political and economic systems in the world and possesses the largest domestic market. The United States also subjects foreign investors to fewer regulatory controls than almost any other industrial nation. Foreign investors achieve a number of benefits by investing in the US. They obtain access to technologies and manufacturing capabilities, secure distribution networks for their

³⁹ On 2 February 1990, President Bush blocked the proposed \$5 million acquisition of MAMCO, Inc., an aerospace components company to CATIC, the People's Republic of China national aerotechnology import and export corporation, on national security grounds. This denial is the first time CFIUS has used the authority granted under Exon-Florio to block a transaction.

⁴⁰ Glickman and Woodward 265.

products, and gain access to a skilled labor pool. In turn, the United States receives substantial benefits from the influx of foreign capital.

Foreign investment promotes growth and competitiveness. Foreign capital has led to an increase in new plants and equipment, and modernization of existing facilities. This has resulted in an overall increase in US industrial capacity and has enabled industry to expand domestically as well as globally, becoming more competitive and obtaining greater market shares as a result of this expanded industrial base.

Foreign investment has a positive effect on interest rates. Foreign investment exerts a downward pressure on US interest rates. Cheaper domestic capital and the availability of foreign capital encourages industrial expansion and this in turn creates new jobs. One economist, Steve Marris of the Institute for International Economics, estimated that US interest rates would have risen by 3.5 to 5.5 percent in the absence of the foreign investment obtained since 1981.⁴¹

Foreign investment creates jobs. Foreign investment creates domestic jobs through three means. The first is what is called greenfield investment, or the construction of new plants on US soil, such as the Japanese automobile plants in Tennessee and Ohio. The Commerce Department's Bureau of Economic Analysis (BEA) data estimates that approximately 45,000 jobs were created from new

⁴¹ Elliot L. Richardson, testimony, Committee on Foreign Affairs, US House of Representatives, 22 Sep. 1988: 74-78.

foreign owned plants for the period 1980 to 1986. Expansions of existing foreign-owned plants added another 341,000 jobs for the same period. From mergers and acquisitions, foreign owners added nearly 1.38 million jobs to their US payroll. Many of these jobs were already on the books and were saved as a result of the foreign purchase. The downside here, however, is that some jobs were lost due to cutbacks, sales, and liquidations (nearly 1.1 million). In combination, this activity resulted in a total increase of nearly 548,000 jobs.⁴² (This will be discussed more in chapter 4.)

Foreign investment introduces new technologies and management practices. Foreign investors certainly introduce new management practices, new products, and new production techniques that would not otherwise be available to American industry. This has the overall effect of improving efficiency and strengthening our industrial base, thereby making us more competitive in the world market.

Foreign investment opens foreign markets to US industry. As foreigners invest in this country, they create access to markets in their own countries. Foreign parent companies provide this access through their home business network. This has resulted in foreign owned domestic firms exporting at a significantly greater rate than US owned firms.

The Disadvantages of Foreign Investment

There are certain negative aspects that must be recognized

⁴² Glickman and Woodward 133-135.

before one can determine the net effect of foreign investment on the US economy and our national security. Congressman John Bryant's statement in 1988 before the House Subcommittee on International Economic Policy and Trade best sums up the fears of most Americans over foreign investment:

Foreign investment in the United States represents an economic invasion more dangerous than any we have experienced in our history. It threatens to turn us into a nation of stewards and servants. Foreign investors are buying our productive assets as a means of controlling us politically as well as economically. They are pirating our most advanced technology and undermining our national security.⁴³

Primarily as a result of the phenomenal growth in foreign investment over the past decade and certainly over the last two years, this issue is receiving greater publicity and attention from the general public. It has raised fears that the United States is essentially losing more than it is gaining from these transactions. This section will discuss some of the more critical concerns involving the negative aspects of foreign investment.

State and local governments are vying for foreign investment without knowing the long-term impact. Both state and local governments are involved in aggressive promotional campaigns to attract foreign investment. Unfortunately, many states and communities are competing against each other and are offering almost unbelievable incentives and tax breaks to attract foreign

⁴³ Defense Public Advisory Committee on Trade (DPACT), Foreign Ownership of Defense-Related Industries, Issue Paper, 2 Sep. 1989.

investors. Foreign investors need only wait for the best offer or hold out until they receive the incentive or advantage they want from a specific community. Several communities and state governments are so hungry for capital they will sacrifice almost anything for this short-term gain. The long-term effects of this type of uncontrolled and uncoordinated marketing for capital are difficult to predict, but many believe that giving away our resources without assessing the impact of foreign investment can only make the US less competitive in the long run.

Foreign investment can result in a loss of political sovereignty. Being dependent on foreign capital can result in subtle forms of manipulation. One of the most alarming forms is the loss of political sovereignty some critics say the US has experienced as a result of dependence on foreign governments and investors. The major issue is that America maybe losing its political and economic autonomy as a result of foreign investment.

For the first time since World War I, the United States has become a debtor nation. The United States moved from being the world's largest creditor nation in 1982 to being the largest debtor nation in 1986.⁴⁴ At the close of 1987, net foreign debt was over \$400 billion, and experts predict that the debt will exceed \$1 trillion by the end of 1990. Much of the debt is held by America's

⁴⁴ The authors recognize that there are counterarguments about US debtor status. These arguments are concerned with the valuation of US and foreign assets based on market or book values.

major competitors.⁴⁵

Although America has been a debtor nation before, this current situation is substantially different. The US was a debtor nation in the 19th century, borrowing heavily to finance railroad development and industrialization. Today the US is borrowing to finance our extraordinary federal budget deficit. This demand for foreign capital to finance our debt will likely continue well into the next decade unless we can control our habit of over-consumption.

The negative aspects of being a debtor nation are associated with the loss of control experienced as a result of being indebted to foreign interests. Essentially, the US is partly owned by foreign governments, banks, and private investors. We need their capital and consequently are subject to subtle forms of control and manipulation. This can be in the form of compromising on political issues or granting special trade concessions that might not be granted if the US were not in such desperate need of capital.

There have been several instances when foreign governments and investors have intervened in US political issues. In one case, foreign investors combined to influence state laws. California's unitary tax law came under severe attack by foreign interests seeking its repeal.⁴⁶ Foreign interests lobbied heavily and spent

⁴⁵ For example, Japan holds approximately \$400 billion of US debt.

⁴⁶ Unitary taxes are taxes assessed on a company's worldwide sales of goods produced in a state rather than only on sales made within the state.

substantial sums to force the repeal. When these efforts failed, they threatened to not invest in California in the future and to pull out existing plants -- obvious blackmail. The situation became so tense that foreign governments took on an active role. Prime Minister Margaret Thatcher eventually persuaded President Reagan to intervene on behalf of the foreign governments. The state unitary tax law was then repealed. This is a clear example of a state losing some of its independence as a result of dependence on foreign investment.⁴⁷

In another example, the congressional fight over the Bryant Amendment demonstrated how foreign interests can influence national politics.⁴⁸ Foreign lobbying efforts to block the amendment became so intense that lobbyists actually threatened several legislators with plant closings and a ban on future investments in those legislators' states if they did not vote against it. The amendment was blocked and a compromise amendment was accepted.

Foreign investment may cause a loss of critical technologies and make America less competitive. The fear here is that foreign investors are investing to gain access to key technologies and then

⁴⁷ Susan Tolchin's testimony, US House Committee on Foreign Affairs, Foreign Investment in the United States, 22 Sep. 1988 (Washington: GPO, 1989) 33.

⁴⁸ Congressman John Bryant, (D-Texas), proposed an amendment to the Omnibus Trade Act of 1988 that called for more stringent reporting requirements on foreign direct investment. Most notably, if a foreign investor held an equity stake of 25 percent or more, or sales of \$20 million or more, it would have to provide the US government a detailed audited financial statement. The amendment was passed by the House but eliminated during the House-Senate Conference Committee debate. The Exon-Florio amendment was adopted as a compromise measure. (Source: Glickman and Woodward, page 270).

shift them back to their home countries. At issue is the effect this has on US national defense and on the competitiveness of American industry. Convincing arguments can be made that the US has lost several key technologies critical to our national defense. Also, arguments can be made that these technologies flowed to foreign investors as a result of free market forces. US firms attract foreign capital and, consequently, the foreign investors share their technology and manufacturing expertise. This is a two-way street. As mentioned, foreign investors do bring new technologies and techniques to US firms as well. With the exception of controlled defense critical technologies, there is little to prevent private companies from shifting technology abroad if it is more economical. In the case of foreign investment, the primary danger is that US firms may not realize that their efforts to raise capital to satisfy short-term requirements may result, in the longer term, in their losing the very technologies and manufacturing processes that gave them a competitive advantage in the first place.⁴⁹ As will be discussed in more detail in the next chapter, US multinational companies frequently shift technology abroad for the very same reason.

FOREIGN INVESTMENT AND THE NATIONAL SECURITY DILEMMA

As discussed, foreign investment in the United States has grown exponentially throughout the past decade, primarily as a result of two major factors. First, our government policies have

⁴⁹ Omestad 128.

emphasized free trade and the unrestricted free flow of capital. Secondly, and perhaps more significantly, the real catalyst that has quickened the rate of foreign investment is the poor condition of the US economy and the strong economic conditions of other nations such as Japan. President Bush will likely continue an aggressive open investment policy. However, there are some critical national security issues that must be addressed and factored into this dynamic open investment policy. The need for greater analysis of investment trends and the implementation of policies to protect key defense industrial and technological capabilities are but two examples of national security concerns.

The first concern is that not enough attention is being given to analyzing the aggregate effects of foreign investment on our national security and competitive strength. On the whole, foreign investment of \$1.5 trillion (1987)⁵⁰ is relatively small when compared to the total US financial assets of \$24.9 trillion for the same year.⁵¹ Since it comprises only 6 percent of the total US portfolio, one could conclude that foreign investment is not at a level that could cause significant problems.

However, the danger is that these aggregate figures and percentages can be very misleading if not analyzed properly. Bernard Schwartz, Chairman of the Loral Corporation and a member of the Defense Policy Advisory Committee in Trade, emphasizes that one must carefully analyze what sectors of the economy are receiving

⁵⁰ Richardson's Testimony 75.

⁵¹ Schwartz 30.

the largest share of foreign investment. If the majority of foreign investment is not in critical sectors of the economy that could have national security implications, then there is little cause for concern. For example, as shown earlier, foreign direct investment in 1987 was roughly \$262 billion, or about 17 percent of total foreign investment. Not a significant figure by itself. Yet, one must remember that, by definition, direct investment implies control over the firm and the ability to influence operations and corporate strategy, such as vital investments in research and development.

Consequently, if a majority of this \$262 billion is invested in industries that may not be considered essential for national security, such as hotels or restaurants, then there is no reason for concern. However, if a majority of the \$262 billion is invested in key components of the defense industrial base, such as critical defense technologies and production facilities, then foreign ownership and control takes on whole new significance and, quite rightly, can become a legitimate national security concern.⁵²

The federal government has primary responsibility for collecting information on foreign investment. A major criticism of current government data collection efforts is that it is ineffective in providing meaningful analysis of foreign investment trends and the extent of penetration of key industrial sectors. Over two dozen agencies collect information in varying formats and

⁵² Schwartz 29.

under different collection and reporting rules.

The Bureau of Economic Analysis (BEA) is the primary agency charged with conducting statistical analysis of foreign investment. Unfortunately, BEA operates under rules that require it to keep the raw data completely secret, even from Congress, and it publishes only aggregate statistics, which are of limited use to most analysts looking for trends that might be detrimental to national security. In fact, many critics, such as Congressman John Bryant of Texas, believe that BEA's aggregate statistics are woefully incomplete. In testifying before the House Subcommittee on International Economic Policy and Trade, he stated:

The Commerce Department reports a so called statistical discrepancy, that's their word, for 1981 through 1987 indicating that the agency believes it has completely missed at least \$223 billion in foreign capital entering the United States. Other estimates of the ignorance gap are more than twice that amount.⁵³

Other critics such as Susan Tolchin believe that as much as 50 percent of all foreign investment goes unreported due to lax reporting requirements, hidden ownership, and other measures used to circumvent the intent of the laws.⁵⁴

Thus, the problem for those concerned with national security is that the extent of foreign involvement in critical sectors of the industrial base is difficult to measure with any degree of

⁵³ Congressman John Bryant's testimony, US House Committee on Foreign Affairs, Foreign Investment in the United States, 22 Sep. 1988 (Washington: GPO, 1989) 168.

⁵⁴ Tolchin's testimony 124.

accuracy. As discussed, data is available from many sources, but it is not compiled and published in any systematic fashion that would indicate the amount of foreign investment in defense companies or even in other industries that support defense production. Unfortunately, there is not even a systematic database listing foreign investments in companies that are involved in classified work.⁵⁵

Bernard Schwartz claims that foreign acquisitions of US defense firms increased almost fourfold from 1983 to 1987 and that the number of purchases in the first half of 1988 (37) was almost equal to the total of all of 1987 (41). This is significant and, as Schwartz asks, "how long can we afford to lose between 40 to 80 defense companies from our industrial base?" If Mr. Schwartz's statistics are in fact accurate, then there is a clear trend of increasing foreign direct investment in the defense industrial base, and this should be a national security issue.⁵⁶

As stated earlier, the United States has a clearly stated policy on foreign investment. It is one that places few restrictions and one that encourages and welcomes foreign capital. It can have a major impact on the vitality of certain industries. Foreign investment can affect competitiveness and cause major changes to the composition of certain industrial sectors. US companies eager to attract foreign capital may be willing to sell critical technologies to foreign interests; also foreign owners of

⁵⁵ Schwartz 31.

⁵⁶ Schwartz 32.

companies may decide to phase out certain manufacturing capabilities or to discontinue research and development in key technologies. Such action can have a detrimental long-term impact on the defense industrial base and its capability to support US national security strategies and requirements such as mobilization.

The impact that foreign investment can have on the defense industrial and technology base is subtle. It is also difficult to detect because much of the loss of capability comes from the cumulative effect of the acquisition of sub-tier component suppliers. The acquisition of first-tier prime defense manufacturing plants or high-tech firms would clearly come under the scrutiny of the Committee of Foreign Investment in the United States (CFIUS). Unfortunately, many acquisitions are looked at only individually for their impact on the industrial base and national security. There is just not enough accurate data, and no single agency is charged with looking at the cumulative effect these acquisitions have on reducing critical manufacturing capability and the loss of domestic advantage in key defense related technologies -- all which would be detrimental to our national security and the vitality of our defense industrial base.

Currently, a variety of Executive Branch agencies and congressional committees are involved in implementing our open investment policy. Each agency develops programs and implements policies that encourage and regulate foreign investment from their perspective or jurisdictional responsibility. In short, there is a jurisdictional approach to making policies that effect foreign

investment. Unfortunately, there is little coordination between these many involved agencies to determine the overall effect all these policies and programs have on maintaining an adequate defense and technology base.

As the Ford administration's Council on International Economic Policy recognized 15 years ago, there may be a time when it is necessary to reexamine the make up of our open investment policy. As they stated on the US open investment policy:

[W]e have opposed any attempt to add to the list of restrictions so unjustified by economic analysis -- a position we will continue to adhere to unless it becomes evident that a particular measure is necessary on the grounds of national security or to preserve our essential national interests.⁵⁷

We believe the evidence shows it is now time for such a change. New investment, economic, tax, trade, and defense policies are necessary to ensure our economic security and, therefore, protect our national security.

⁵⁷ Glickman and Woodward 257.

CHAPTER 3
FOREIGN SOURCING

When the history of this period is written, historians are going to marvel at a great economic power surrendering its economic might with so little resistance.⁵⁸

Professor Carol Greenwald, Harvard University

The world has changed dramatically since the end of World War II, when US industry was the envy of the world. The "Arsenal of Democracy" that the US built to equip and sustain its military forces is long gone. Scores of defense plants, arsenals, and depots have been sold and dismantled. Dozens of government research and development laboratories have been reorganized out of existence, and hundreds of commercial firms that once provided military goods no longer do defense work.

As recently as a half-century ago, military items, as well as the technologies they embodied and the facilities in which they were produced, had rather limited commercial application. Neither the military items nor the production facilities in which they were produced could be easily or economically converted to commercial use. Later, during the 1950s and 1960s, when defense spending was

⁵⁸ Tolchin and Tolchin 239.

nearly half the federal budget, breakthroughs in government-related research and development began to be increasingly adapted to consumer products. As the defense share of federal spending declined in the aftermath of Vietnam, the process began to reverse itself. By the mid-1970s, the development of emerging technologies in the consumer sector began to pace the improved performance characteristics of new defense systems. The electronics revolution and the development of the semiconductor perhaps more than any other single factor led to a growing crossover in technology between the once almost technologically isolated defense industry and the increasingly more global consumer products market.

Following the rebuilding of entire economic and industrial sectors of countries devastated by World War II, strong foreign competitors have arisen that now hold large shares of not only US commercial markets, but world markets as well. In some market sectors, such as consumer electronics and, more recently, computer memory chips, foreign sources have virtually taken over. US firms once dominant in these markets have declined substantially or have disappeared completely.

Consider the following examples of the kinds of changes that have taken place in commercial markets in the recent past:

- ♦ In 1965, the world's three top automobile manufacturers were American, and no Japanese firm was in the top ten. Today, two Japanese companies rank in the top four behind GM and Ford.

- ♦ In 1966, six of the world's largest banks were American, and no Japanese banks were in the top ten. Today, all ten of the world's largest banks are Japanese.
- ♦ The Tokyo Stock Exchange, once substantially smaller than the exchanges in London, New York, and elsewhere, is now the largest stock exchange in the world, with stocks surpassing the value of those on the NYSE by some 50 percent. Nomura, Japan's leading securities trading firm, is 20 times larger than Merrill-Lynch.
- ♦ The market capitalization of Nippon Telephone and Telegraph is greater than the capitalization of IBM, AT&T, GM, Exxon, and General Electric combined and is larger than the combined worth of all companies in West Germany.
- ♦ Nowhere is the diminished US role more evident than in the consumer electronics market. In 1970, the American share of the color television market, a technology developed here, was nearly 90 percent. At that time there were 18 major US color television manufacturers selling here and abroad. Today, there is only one US producer while 13 foreign companies are selling in the US market.
- ♦ The US share of the telephone market, a product also invented here, has dropped from nearly 100 percent to 25 percent and still falling.
- ♦ Audio tape recorders, VCRs, and record players, all developed from US technology, have fallen from 40 percent or higher to virtually zero market share.

♦ In 1975, five of the six companies in the semiconductor industry were American. Today, four of the six top companies that dominate this key industrial market are Japanese.⁵⁹

These products are not the sort one commonly associates with defense. But because of the growing crossover of commercial and military technologies, this import penetration in commercial markets has led to a proportional decline in the number of US firms that are competitive in the US defense industry. And with the decline in the number of US firms operating in the defense industrial base has come an increasing reliance on foreign sources for the products needed to build and sustain US defense systems. In the aggregate, the increase in import share of the defense industry is estimated to have increased from 8.3 percent in 1980 to 12.3 percent in 1986. Total import penetration was observed to have grown between 1980 and 1986 in 104 of 122 critical defense sectors for which data are available.⁶⁰ However, because of the lack of data, as will be discussed later, even these trends are probably understated.

A recent study by the Center for Strategic and International Studies estimated that the number of American companies supplying

⁵⁹ Norman Augustine, "US Credibility and Viability in Worldwide Competition," Vital Speeches of the Day 1 Sep. 1989: 693.

⁶⁰ Center for Strategic and International Studies (CSIS), Deterrence in Decay: The Future of the US Defense Industrial Base, 1989: 37.

manufactured goods to DOD dropped from 138,000 in 1982 to less than 40,000 in 1987.⁶¹

THE FOREIGN SOURCING ISSUE

The erosion of the US defense industrial base has been the subject of many recent studies. Most have concluded that reliance on foreign sources is an irreversible trend. While domestic control of all aspects of the defense industry may be desirable, most recognize that it is simply not achievable for the US in the existing environment. Not only is the cost prohibitive, particularly in view of the demand for less defense spending, but also the public perception of a vanishing Soviet threat, foreign leadership in certain technologies, and the increasingly integrated world economy all help explain why US industrial self-sufficiency is no longer a realistic or achievable goal.

America in the Global Economy

The US remains the world's largest economy by almost any standard. But it is certainly not the same single dominant economic power of the early post-World War II era. With 5 percent of the world's population and 6 percent of the world's land mass, America produces 26 percent of the world's goods. The US standard of living continues to lead the world, with per capita income some 35 percent higher than Japan and 50 percent higher than the average

⁶¹ Richard W. Stevenson, "Foreign Role Rises in Military Goods," New York Times 23 Oct. 1989: 1.

in the European Community.⁶²

America still has the highest worker productivity in the world across the full range of the economy, although the competition has narrowed the gap in recent years. Japanese productivity has more than doubled in the past two decades but is still only about 70 percent as high as that of the US.⁶³

In 1989 for the 20th year in a row, the federal government spent more than it took in. The US has not had a balanced budget since 1969, and as a result, the interest on the national debt now takes 15 cents of every federal dollar spent.

The US is still the world's leading trading nation, reaching record or near-record export levels each month. But imports into our economy have risen far faster and higher than exports so that the US market share has fallen, even in market areas previously dominated by American firms, such as high-technology products.

The US continues to lead in innovation as measured by worldwide patents issued, although the margin is diminishing rapidly, with a growing share of US patents going to foreign inventors. In 1988, for example, the three companies amassing the largest number of US patents were all Japanese.⁶⁴ While the US still possesses the lead in the development of technology, our market position shows significant erosion in terms of the

⁶² Augustine 693+.

⁶³ Augustine 693+.

⁶⁴ Defense Science Board (DSB), Final Report of the DSB: 1988 Summer Study on the Defense Industrial and Technology Base, Volume II, 1988: 50.

application of technology. In fact, the US now shows a trade deficit in technology-intensive products, with a few exceptions, including the aerospace and computer sectors, where the US still holds dominant positions.

Role of Technology in Defense Strategy

The US has chosen to rely on maximizing the performance of its weapons systems to counter our adversaries' numerical superiority. The quality of our weapons performance increasingly depends on sophisticated electronics and other high-tech components for communication, target acquisition and detection, sensing and tracking, and damage assessment. These features and the electronic components that make them possible are principally what differentiate our weapons from the Soviets. The growing importance of electronics in US weapons systems can be seen by considering the Navy's F-18, which replaces the older F-4. Whereas the F-4 was approximately 2 percent electronic, the F-18 is greater than 40 percent electronic. Similarly, the Army's main battle tank is equipped with a solid-state ballistic computer, laser rangefinder, thermal imaging night sight, chemical protective over-pressure system, and other features, all of which result from the application of high technology. It was estimated in 1987, that 35 percent of the research, development, and procurement funds in the

Critical Technology	Objective
1. Microelectronics Circuits and Their Fabrication	The production of ultra-small integrated electronic devices for high-speed computers, sensitive receivers, automatic control, etc.
2. Preparation of Gallium Arsenide (GaAs) and Other Compound Semi-Conductors	The preparation of high purity GaAs and other compound semi-conductor substrates and thin films for microelectronic substrates.
3. Software Producibility	The generation of affordable and reliable software in timely fashion.
4. Parallel Computer Architectures	Ultra-high-speed computing by simultaneous use of all processing capabilities in the next generation of computers.
5. Machine Intelligence/Robotics	Incorporation of human "intelligence" and actions into mechanical devices.
6. Simulation and Modeling	Testing of concepts and designs without building physical replicas.
7. Integrated Optics	Optical memories and optical signal and data processing.
8. Fiber Optics	Ultra low loss fibers and optical components such as switches, couplers, and multiplexers for communications, navigation, etc.
9. Sensitive Radars	Radar sensors capable of detecting low-observable targets, and/or capable of non-cooperative target classification, recognition, and/or identification.
10. Passive Sensors	Sensors not needing to emit signals (hence passive) to detect targets, monitor the environment, or determine the status or condition of equipment.
11. Automatic Target Recognition	Combination of computer architecture, algorithms, and signal processing for near real-time automation of detection, classification, and tracking of targets.
12. Phased Arrays	Formation of spatial beams by controlling the phase and amplitude of RF signals at individual sensor elements distributed along an array (radar, underwater acoustic, or other).
13. Data Fusion	The machine integration and/or interpretation of data and its presentation in convenient form to the human operator.
14. Signature Control	The ability to control the target signature (radar, optical, acoustic, or other) and thereby enhance the survivability of vehicles and weapon systems.
15. Computational Fluid Dynamics	The modeling of complex fluid flow to make dependable predictions by computing, thus saving time and money previously required for expensive facilities and experiments.
16. Air Breathing Propulsion	Light-weight, fuel efficient engines using atmospheric oxygen to support combustion.
17. High Power Microwaves	Microwave radiation at high power levels for weapon applications to temporarily or permanently disable sensors, or to do structural damage.
18. Pulsed Power	The generation of power in the field with relatively light-weight, low-volume devices.
19. Hypervelocity Projectiles	The generation and use of hypervelocity projectiles to (1) penetrate hardened targets, and (2) increase the weapon's effective range.
20. High-Temperature/High-Strength/Light-Weight Composite Materials	Materials possessing high strength, low weight, and/or able to withstand high temperatures for aerospace and other applications.
21. Superconductivity	The fabrication and exploitation of superconducting materials.
22. Biotechnology Materials and Processing	The systematic application of biology for an end use in military engineering or medicine.

Table III-1: Critical Technologies and Their Objectives

Source: Department of Defense Critical Technologies Plan, 15 March 1989 (revised 5 May 1989).

defense budget were spent on electronic components.⁶⁵

If the US is to maintain its existing qualitative weapons systems' superiority, it must be able to identify and exploit emerging technologies that will contribute toward that end. Listed in table III-1 are the technologies DOD considers most critical to ensuring long-term superiority of US defense systems. To further amplify the role emerging technologies may play in future weapons systems, appendix A identifies and explains those technologies the US Army considers vital.

Understanding Key Terms

The report *US Industrial Base Dependence/Vulnerability*, by the Mobilization Concepts Development Center (MCDC), provides some definitions and insights that are useful in understanding the foreign sourcing issue.⁶⁶ We will use and build upon these definitions in this paper. Figure 3-1 shows the relationship between the three key terms.

- ♦ A foreign source of supply, manufacture, or technology is one that is located outside of the US or Canada.⁶⁷ Some examples of foreign sources are optical equipment from Germany, industrial fasteners from Taiwan, semiconductors from Japan,

⁶⁵ Defense Science Board (DSB), Defense Semiconductor Dependency, Feb. 1987: 37.

⁶⁶ Martin Libicki, Jack Nunn, and Bill Taylor, US Industrial Base Dependence/Vulnerability: Phase II-Analysis, Nov. 1987: 3.

⁶⁷ Canada is defined by current DOD acquisition regulations as part of the industrial base that is available to the US during an emergency.

rocket-motor casings from Great Britain, and textiles from the Philippines. Based on this definition, firms that are owned or controlled by foreign companies but are located in either the US or Canada are not considered foreign. The determining factor is the physical location of the source.

- ♦ A foreign dependence is a source for which there is no immediately available alternative in North America. For example, there is currently no US or Canadian source for the rocket-motor casings bought from the Royal Ordnance Factories in the UK.

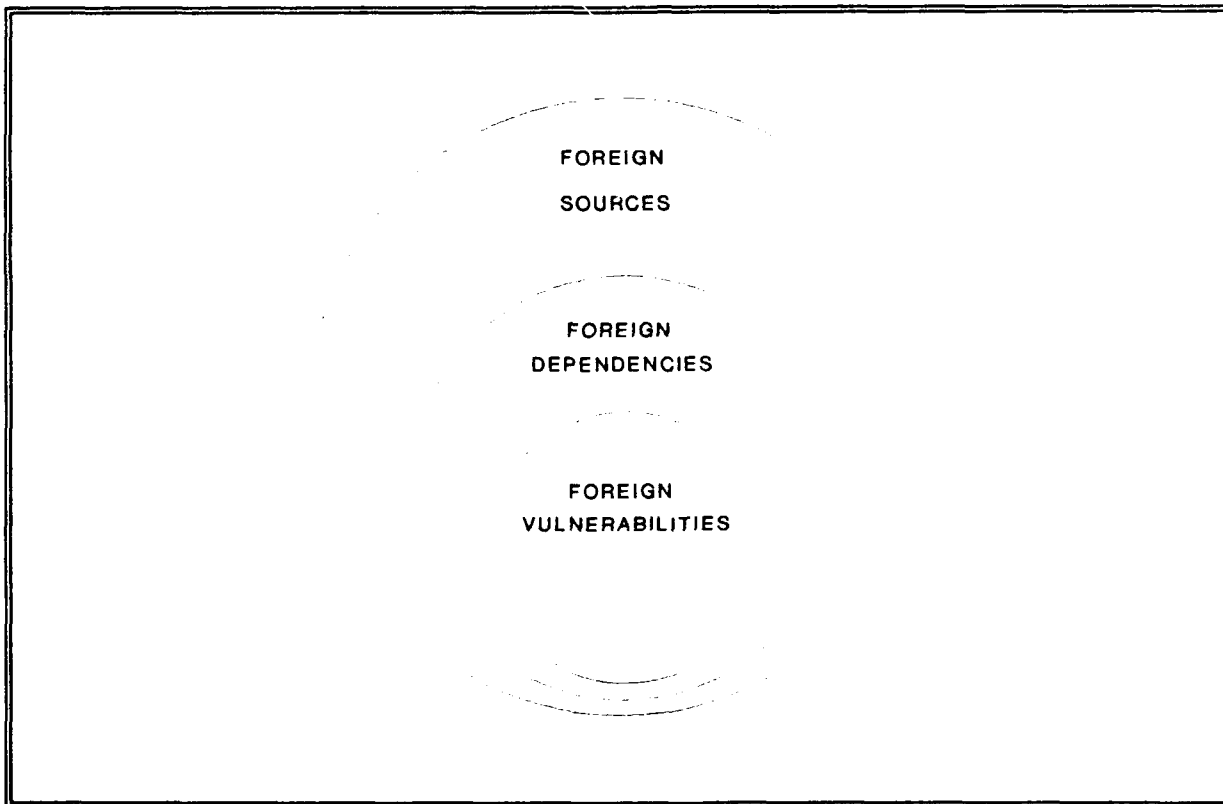


Figure 3-1: Foreign Sourcing Terms Relationships
Source: Martin Libicki, Jack Nunn, and Bill Taylor, US Industrial Base Dependence/Vulnerability: Phase II-Analysis, Nov. 1987: IV.

- ♦ A foreign vulnerability is a subset of foreign dependence for those items or technologies whose nonavailability or whose lack of reliability or substitutability precludes the production or significantly reduces the capability of a critical weapons system.

Recognizing a Vulnerability

Definitions of foreign source and foreign dependence are relatively simple, straightforward, and require only a yes or no answer; foreign vulnerability, however, is much more complex. Obviously, not everything that comes from a foreign source, or even from a foreign dependency, is a vulnerability. As the MCDC study points out, the determination of a vulnerability depends on a number of factors: the criticality of the item, the number and location of sources, and the likelihood or probability of interruption or cutoff of supply of either products or technology that come from foreign dependence.

As can be seen in figure 3-2, the matter of vulnerability from a foreign dependence must be viewed from two orientations. First, there is the more or less traditionally understood vulnerability to wartime production of critical military systems, which would result from the interruption of products or components available only from foreign sources. This vulnerability relates principally to production under a time constraint and includes the immediate pre-war period, the initial production ramp-up, and the sustained production throughout the length of a national emergency. A production vulnerability exists when a foreign dependency has a

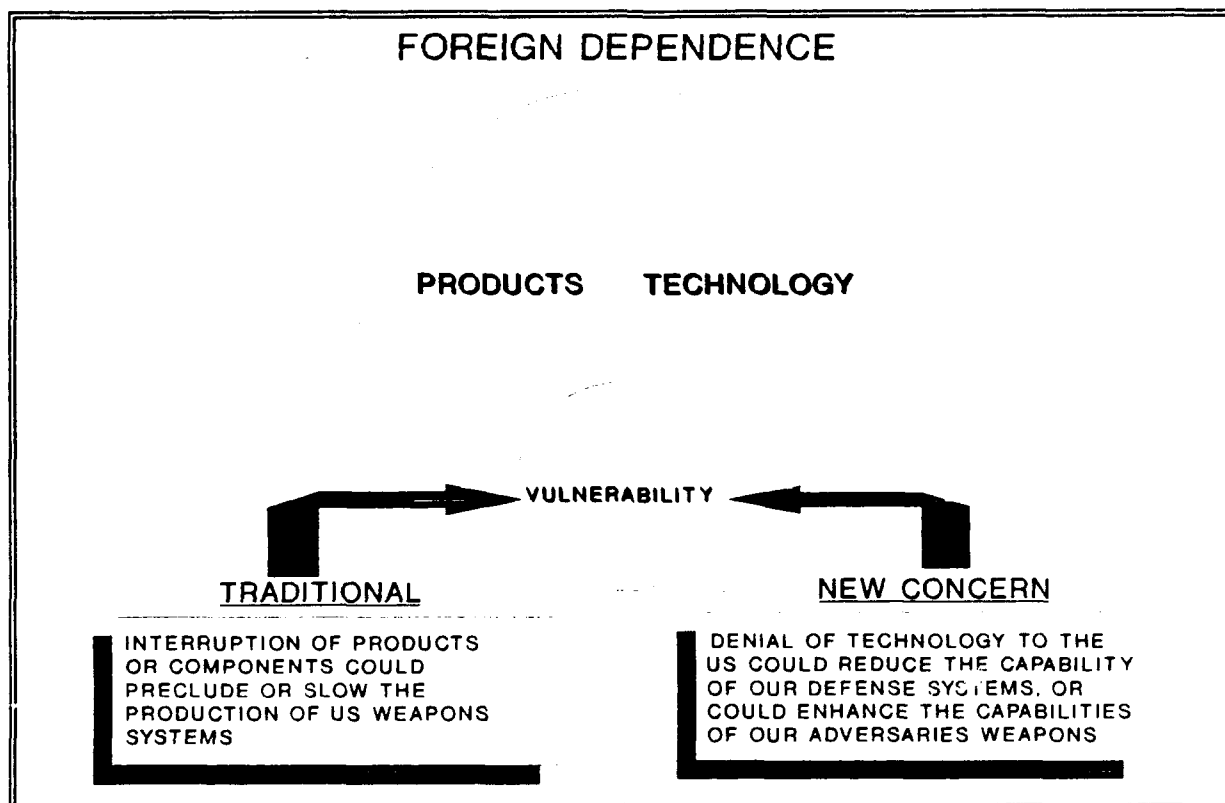


Figure 3-2: Foreign Dependence

Source: Martin Libicki, Jack Nunn, and Bill Taylor, US Industrial Base Dependence/Vulnerability: Phase II-Analysis, Nov. 1987: IV.

high probability of precluding or slowing the production of a critical military system during surge or mobilization. The traditional sort of response to a foreign dependency (the type we have with respect to some raw materials and strategic minerals) has been to stockpile. While this approach has advantages and is appropriate for certain raw materials and even foreign-sourced components and products, it is simply not applicable to the sort of technology dependence that we seem to be facing in the future.

The second form of vulnerability is a technology vulnerability that may reduce the overall capability of a US weapon system.

This technology-based vulnerability is in one sense a

relatively new concern, but in another, has been important to the US since the end of World War II. The US has periodically voiced concern over the role technology might play in maintaining the military balance with the Soviet Union. This concern arose from the possibility of a Soviet technological breakthrough of their own or from the Soviets gaining access to US technology that was the basis of our defense systems' superiority. An example of the latter is the case of Toshiba selling critical submarine noise-reduction technology to the Soviets in 1987 after having been licensed by the US government to use this technology. The new concern, however, is that technology will be developed by a third country, perhaps Japan or a western European country, and that the US might not have sufficient access to that technology in either peace or war. Thus, the technology vulnerability concern is not over the orderliness of the production, but over the development and subsequent production of military systems.

A technology-base dependency exists when the US must acquire advanced technology for critical weapons development from a foreign source. A technology base vulnerability exists when there is high probability that the US will not have sufficient access to the necessary technology, and that the lack of that technology will prevent the US from developing and producing weapons systems critical for maintaining deterrence or winning a war.

Vulnerability arising from a dependence on foreign sources for defense products and technology can manifest itself in several ways. In an emergency, our adversaries could interrupt the flow of

supplies by severing the long, less well-protected supply lines that must be kept open between the US and our foreign suppliers. Protecting such supply lines could easily demand more naval and air assets than are or would be available for the task. While this is a concern, it is no different than depending on US multinational firms that have production or research facilities located abroad. The newer dimension of US vulnerability is that foreign products or technology could be denied to the US by the foreign source as a means of coercion to gain some political, economic, or foreign policy objective; or these products or technologies could be provided to our adversaries for the same purpose.

Data from an independent survey of US industry and government leaders conducted by Ernst & Young (figure 3-3) reflected very wide agreement on the need to assess the vulnerability that arises from our dependence on foreign sources.

Extent of Foreign Dependence

The actual extent of US dependence on foreign sources is difficult to determine. There is simply not enough factual or complete information on the origin of components used in many of our military systems. Although it seems difficult to imagine, "the DOD does not know the extent to which foreign sourced parts and components are incorporated into the systems it acquires."⁶⁸ A General Accounting Office (GAO) study of the industrial base

⁶⁸ DOD, Report of the SECDEF: Bolstering Defense Industrial Competitiveness, July 1988: 4.

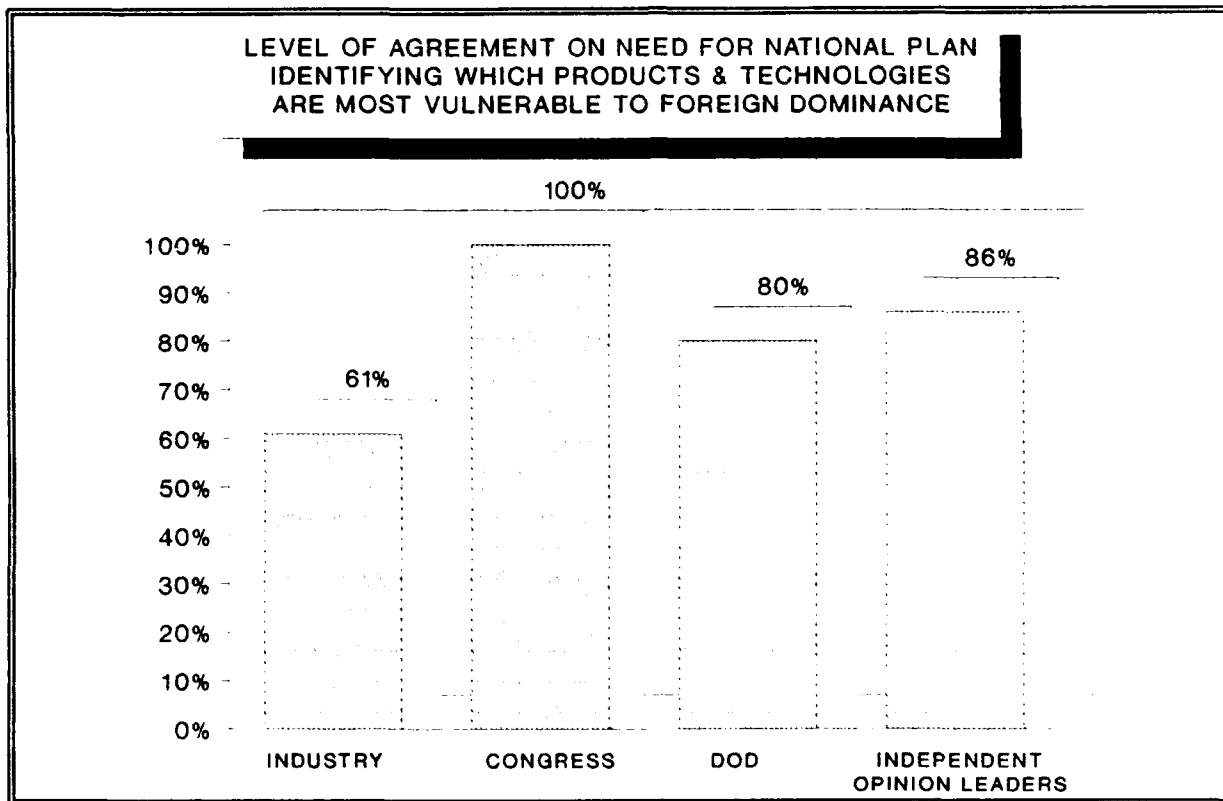


Figure 3-3: Level of Agreement

Source: "US Leaders Cite Need For Technology Plan," Aviation Week and Space Technology 2 Oct. 1989: 28.

released on 15 November 1989 concluded the following:

- ◆ It is currently impossible to measure the overall extent of dependence on foreign sources for US weapons systems.
- ◆ There has been an ad hoc approach to data collection, which
 - ◆ limits the amount of data gathered on the lower-tier (subcontractor/vendor) level.
 - ◆ does not facilitate the identification of domestic sources that should be specifically supported or maintained.

- ♦ does not shorten the DOD decision cycle for acquiring systems, as a more comprehensive data collection effort would.
- ♦ limits DOD's ability to be proactive in identifying trends in critical sectors.
- ♦ Efforts are underway to establish systems to determine the extent of foreign dependence, but so far these have been slow and not adequately funded.
- ♦ DINET (Defense Industrial Network) is an effort intended to provide information and analysis on, among other things, reliance on foreign sources. To date, DINET has been funded for approximately 5 percent of the estimated cost.⁶⁹
- ♦ Army/Census Bureau Project is an effort intended to provide information on US manufacturers' ability to expand their production capacity and on the extent of foreign dependency. The decision to implement this project was postponed until 1992.⁷⁰

⁶⁹ DINET is a DOD program started in 1985 that is intended to provide a variety of information and analysis on acquisition, trade, foreign direct investment, current economic trends, critical military technologies, industrial capabilities, military requirements data, and reliance on foreign sources. The program was projected to be complete in 1993. However, DINET's total estimated cost ranged from \$7 million to \$29 million depending on the data collection alternatives selected. Through FY 1990, DINET had been funded for a total of only \$1.4 million.

⁷⁰ The Army/Census Bureau Project is intended to minimize the need and expense of special studies by federal agencies by using existing data collection methods. This project would collect necessary data to provide visibility not just over a few selected industries, but over the whole sub-tier structure and established

- ◆ Subcontract Report of Foreign Purchases, DD Form 2139 is the only existing DOD reporting procedure that is designed to determine the dollar value and extent of subcontracting from foreign sources. However, the reliability of the data collected is questionable, as it is neither all-inclusive nor uniformly submitted.

Clearly, if we are to avoid an undue foreign vulnerability, we must first know the origin of our defense materials and the technologies responsible for their development.

Production Dependence

While there is no complete set of data that can be analyzed to determine the overall extent of the US foreign dependence, there have been reviews to ascertain the source of component parts for some specific weapons systems. One such review was conducted of the Precision Guided Munitions (PGM) sector (table III-2). The results indicated that of the 17 types of PGM included in the study, foreign-sourced parts represented only 1 to 2 percent of the total weapons cost. However, dependence on foreign sources was widespread and the parts provided by foreign suppliers were critical to the weapons' performance.

Nearly 300 domestic vendors were surveyed and 27 specific instances of dependencies were found.⁷¹ In this particular study,

industry. Because of budget constraints, the decision whether to implement this program has been postponed until 1992. If implemented, it would be linked with DINET.

⁷¹ Libicki, Nunn, and Taylor 41.

<u>PGMs EXAMINED</u>	
<u>PGM</u>	<u>USER</u>
SIDEWINDER	NAVY/MARINES/AIR FORCE
SPARROW	NAVY/MARINES/AIR FORCE
PHOENIX	NAVY
HARM	NAVY/MARINES
HARPOON	NAVY/AIR FORCE
TOMAHAWK	NAVY
STANDARD	NAVY
MK 46 TORPEDO	NAVY
GBU-15	AIR FORCE
IR MAVERICK	NAVY/MARINES/AIR FORCE
LASER MAVERICK	NAVY/MARINES
SKIPPER	NAVY/MARINES
COPPERHEAD	ARMY/MARINES
TOW	ARMY/MARINES
HELLFIRE	ARMY/MARINES
PATRIOT	ARMY
STINGER	ARMY/NAVY/MARINES/AIR FORCE

Table III-2: PGMs Examined

Source: Martin Libicki, Jack Nunn, and Bill Taylor, US Industrial Base Dependence/Vulnerability: Phase II-Analysis, Nov. 1987: IV.

virtually all foreign sources were or are allies or friendly neutral countries and, except at the raw materials level, no third world country was represented (see table III-3). This study concluded that the foreign sourcing of PGM components, while a small share of total weapons cost, is clearly capable of creating sharp schedule disruptions in the event of a cutoff. Such a disruption would significantly reduce the quantity of these weapons available during the early stages of any large-scale conflict, and for up to one year until the domestic capability to provide the components could be established.

SOURCE COUNTRIES FOR PGM COMPONENTS

- UNITED KINGDOM
- JAPAN
- WEST GERMANY
- AUSTRALIA
- SWITZERLAND
- ISRAEL
- MEXICO
- AUSTRIA
- SOUTH AFRICA

Table III-3: Source Countries for PGM Components

Source: Martin Libicki, Jack Nunn, and Bill Taylor, US Industrial Base Dependence/Vulnerability: Phase II-Analysis, Nov. 1987: 45.

In another similar study conducted in 1986 for the Joint Logistics Commanders, 13 DOD weapons systems were reviewed, and dependencies were found in 8 systems, with severe problems in 6 of those. Table III-4 identifies the systems included in this study. According to this study, if the foreign sources were interrupted, these dependencies could result in a total cutoff of production of these weapons as early as 2 months into a war mobilization and lasting for a period of from 6 to 14 months until domestic sources could be established.⁷²

⁷² US GAO, Industrial Base: Adequacy of Information on the US Defense Industrial Base, Nov. 1989: 15.

- HARRIER AIRCRAFT
- F-16 AIRCRAFT
- F-18 AIRCRAFT
- ADVANCED HELICOPTER IMPROVEMENT PROGRAM
- M1 MAIN BATTLE TANK
- COMBINED EFFECTS MUNITIONS
- AN/SSQ-53B SONOBUOY
- SPARROW MISSILE
- 5 TON TRUCK
- M483 IMPROVED CONVENTIONAL MUNITIONS
- AR-5 CHEMICAL PROTECTIVE SUIT
- AN/ALO-131 ELCTRONICS COUNTERMEASURE PAD
- 25K & 40K AIRCRAFT CARGO-LOADER

Table III-4: Joint Logistics Commanders' 1986 Study Systems List
Source: GAO, Industrial Base: Adequacy of Information on the US Defense Industrial Base, Nov. 1989: Appendix II, pg 15.

The results of these two surveys reveal a potential vulnerability in the production of US defense systems, which results from a dependence on foreign-sourced parts. This sort of production vulnerability is clearly related to, but less insidious than our growing dependence on foreign technology.

Technology Dependence

A foreign vulnerability arising from the dependence on foreign sources for the production of existing weapons systems may not be considered a serious military problem per se. If specific dependencies are identified, then stockpiles or quantities of

weapon-system-specific buffer stocks can be acquired to minimize the vulnerability from an interruption in the supply. But over time, if foreign dependence continues to grow, the costs for stockpiling such components will become prohibitively high, while the US technology base will continue to erode. Perhaps the most sobering study of the foreign dependency issue was the one conducted by the Defense Science Board in 1987, which considered DOD's semiconductor dependency. And while we certainly have a production dependency from our reliance on semiconductors, as can be seen by table III-5, this is also an example of our growing technology dependence.

SYSTEMS DEPENDANT ON FOREIGN "CHIPS"

- GLOBAL POSITIONING SYSTEM (SATELLITE)
- INTEGRATED UNDERWATER SURVEILLANCE SYSTEM
- DEFENSE SATELLITE COMMUNICATIONS SYSTEM
- FLEET SATELLITE COMMUNICATIONS SYSTEM
- SSN ANQ-53B SONOBOUY
- F-16 FIGHTING FALCON
- AIM-7 SPARROW AIR-TO-AIR MISSILE
- AM-6988 PACT DECOY (EXPENDABLE JAMMER)
- ARMY HELICOPTER IMPROVEMENT PROGRAM (AHIP)
- APG-63 AIRBORNE RADAR (F-15 EAGLE)
- M1 ABRAMS MAIN BATTLE TANK
- F/A-18 HORNET



Table III-5: Systems Dependent on Foreign "Chips"

Source: Defense Science Board (DSB), Defense Semiconductor Dependency, Feb. 1987: 64.

The study reached the following conclusions:

- ♦ US forces depend on technological superiority to win.
- ♦ Electronics is the technology that can be leveraged most.
- ♦ Semiconductors are the key to leadership in electronics.
- ♦ Competitive, high-volume production is key to leadership in semiconductors.
- ♦ High-volume production is supported by a commercial market.
- ♦ US leadership in high volume production is being lost.
- ♦ Semiconductor technology leadership will soon reside abroad.
- ♦ And, unless steps are taken to reverse the current trend, future US forces will depend on foreign technological superiority to win.

To further amplify the seriousness of the US semiconductor dependence, we must recognize that semiconductor technology is the foundation of virtually every significant defense system, either as a part of the system itself or in the design and development.

Japan currently controls 92 percent of the world's high-power memory chips, an industry created in the US. One American electronics manufacturer has already indicated that because of Japan's near monopoly in the computer chip industry, his suppliers are now dictating to him what consumer products he can manufacture.⁷³ Could this foreign power to influence/control product decisions also affect our military sector as well?

Messrs. Ishihara and Morita, the authors of a recent book, *The Japan That Can Say No*, contend that no matter how much the

⁷³ US, Congressional Record, 20 Oct. 1989: S13803.

Americans expand their military, they have come to the point where they can do nothing if Japan were one day to say "we will no longer sell you our chips." And they continue by suggesting that if Japan would say no to the US and sell semiconductors to the Soviet Union instead, it would instantly change the balance of power.⁷⁴

Because of the lack of complete data, the true extent of our dependence on foreign sources is impossible to measure finitely. Hence, there is no precise way to determine just how vulnerable we have become. But these and other limited studies clearly show a trend toward increasing reliance on foreign sources for the products and technologies used in our defense systems.

Concentration of Foreign Sources

In his recent paper, "The Globalization of America's Defense Industries. What Is the Threat? How Can It Be Managed?", Theodore Moran provides some interesting insight into the foreign sourcing issue. He contends that it is the concentration of dependence on foreign suppliers, rather than simply the extent of foreign dependence, that is the key to determining and remedying any vulnerability from this foreign dependence. Dr. Moran asserts that it is when the concentration of a foreign dependence is in the hands of only one or two foreign firms or countries, as we have just seen with regard to dependence on Japan for semiconductors, that the US is most vulnerable. And he presents a compelling argument for why and how diffusing the concentration of foreign

⁷⁴ Cong Rec S13803.

dependence may be the most realistic way to minimize the vulnerability arising from the increasingly more global defense industry.

With the exception of those raw materials that exist in only one place in the world, the key to an assured future supply of products and technology might depend less on ensuring the supply exists in the US than on ensuring it exists several places worldwide.

Multinational Firms and Joint Venture/Co-production Agreements

Although generally understood and accepted, the definition of foreign source makes no distinction among firms located in North America based on who owns and/or controls their operations. As pointed out in the preceding chapter, failing to identify and distinguish even among sources located in North America may not serve US long-term national security interests. Conversely, subsidiaries of US firms that are located outside North America are considered foreign. By this definition, multinational firms with offshore operations and joint-venture and co-production arrangements with foreign partners are also considered foreign sources.

These arrangements allow US firms to team with foreign companies to exploit the comparative advantages that each firm possesses. For instance, an American firm with marketing and distribution expertise may team with a foreign firm that has better skills in R&D or production. Such an effort hopes to produce a

synergy where 1 plus 1 equals 3.

In theory, a good reason for entering into such agreements is that they reduce the total amount of financial and operating risk in new product development. They also allow entry into foreign distribution systems, promote interoperability, and offer small employment gains.⁷⁵ However, multinational companies are often alleged to be responsible for much of the loss in America's technology leadership to foreign firms, by locating both research and production facilities in other countries. Similarly, joint-venture or co-production arrangements between US and foreign firms are frequently blamed for the loss of American jobs and erosion of US industrial competitiveness. While there may be some truth to such assertions, it is not because these types of joint arrangements are inherently bad. Rather, it is because many of us have not, until recently, recognized the damage being done.

A key difference with other sourcing arrangements is that in joint venture situations the loss of process or product technology to the foreign partner is a critical issue. Foreign joint-venture partners often tend to leave sensitive research and production operations at home and allow only US firms to market their products. For instance, Kodak's arrangement with Matsushita allows the US company to sell only the Japanese video camera. As is also typical, American firms often get work-share agreements

⁷⁵ According to JCS PUB 1, interoperability is defined as the ability of systems, units, or forces to provide services to and accept services from other systems, units, or forces and to use the services so exchanged to enable them to operate effectively together.

that allot to American workers only the simpler, assembly-type jobs. Or in other cases, American firms will enter into offset agreements wherein various future concessions are promised to the foreign partner as a part of the current deal.⁷⁶ Foreign companies and their governments view offsets as a means of improving their balance of trade, gaining access to new markets, utilizing excess productive capacity and upgrading their industrial base. As we will point out later with an example from the machine tool industry, American firms, as a rule, have been less zealous about guarding against technology loss, seeking technology gain, or preserving long-term market share.

Why do American joint venture partners accept such work-share or offset agreements? It is a matter not only of how much leverage the foreign partner has in negotiations, but also of the relatively short-term focus of American firms when considering the risk from the loss of technology or market share.

Existing US Policy/Regulations Affecting Foreign Sourcing

Buy American Act. The Buy American Act was enacted in 1933 for the expressed purpose of ensuring that goods procured by the federal government would be purchased from domestic sources to the maximum practical extent. The Act requires a high-level waiver in

⁷⁶ Offsets are a range of industrial and commercial practices such as co-production, counter-trade, technology transfer; mandatory subcontracting; overseas investment; licensing or other arrangements for the transfer of advanced production and processes; and management skills that other nations impose as a condition of the purchase of US military exports or a joint venture agreement with US firms.

those cases where the needed product or material is unavailable at a competitive price from domestic sources. Over time, the number and frequency of waivers has increased. As part of the effort to improve international coordination in weapons planning and purchasing, the 19 nations with which the US has reciprocal military trade agreements are routinely given waivers to the Buy American Act.

Federal Acquisition Regulations. Recent policies have emphasized procurement at the lowest cost and international cooperation. Encouragement for the Defense Department to buy more off-the-shelf products whenever possible means relying on products designed for worldwide competition. As demonstrated earlier, this trend increasingly means that those products are likely to be of foreign origin or contain foreign components. At the same time, increased competitive pricing pressure forces prime contractors to consider using overseas subcontractors or component suppliers, whose costs are often lower. Federal procurement regulations also contain provisions that are intended to protect elements of the industrial and technology base. Small-business set-asides, labor surplus area set-asides, mobilization base restrictions on bearings, ferroalloys, silicon and watches, restrictions on the foreign purchase of specific items like textiles, coal, typewriters, specialty metals, and others are all aimed at limiting foreign sourcing or protecting American suppliers.

Defense Production Act. Enacted in 1950 in response to the Korean War, this act provides, among other things, a counterbalance

to actions occurring outside of the US that could result in termination or reduction of the availability of strategic and critical raw materials, articles, commodities, products, supplies, components, technical information, and processes.⁷⁷ It enables the government to prioritize and allocate the materials necessary to expand the US industrial production capability to support national mobilization.

Antitrust Laws. As described in the previous chapter, US firms must comply with a number of antitrust laws. These laws were enacted at a time when it may have been necessary to protect the US consumer from the monopolistic, anti-competitive practices of US firms. Some protection may still be required in certain instances. However, these laws now serve to prevent US firms from collaborative efforts and the combining of resources that would enable them to more fairly compete with their foreign counterparts in the increasingly global economy.

US Tax Laws and Accounting Principles. There are many others, but one good example of how US tax laws and generally accepted accounting principles adversely impact American firms is the way we treat the depreciation of industrial plants and equipment. Businesses use depreciation as the means of recovering costs to replace or reinvest in productive assets. In the US, industrial buildings are typically depreciated over a period of 30 to 45 years, while industrial equipment is depreciated over 6 to 12

⁷⁷ Jules Backman, The Economics of Armament Inflation, (New York: Rhinehart and Company, 1951) 209.

years. This depreciation is based on the acquisition cost, not the replacement cost. Thus, when inflation is taken into account, only a small percentage of the actual replacement cost is recovered. This essentially defeats the purpose for depreciation. The US has one of the least supportive tax policies of the major industrialized nations. As a comparison, Switzerland allows 50 to 80 percent depreciation of new machinery in the first year; England allows 100 percent in the first year; Japan allows 95 percent in the first year, while Canada allows 100 percent in the first two years.⁷⁸

Section 232, Trade Expansion Act of 1962. This act provides the president broad powers to adjust imports of any article if it has been determined that its import threatens to impair national security. The act requires that an immediate investigation is to be made upon request of the head of any department or agency, or upon application of any interested party, to determine the effects on the national security of imports of the subject article. Consideration is to be given to domestic production needed for projected national security requirements; the capacity of domestic industries to meet such requirements; existing and anticipated availabilities of the human resources, products, raw materials, and other supplies and services essential to the national defense; the growth requirements of the industries and supporting suppliers; and the impact of imports, as measured by their qualities,

⁷⁸ US Congress, House, Defense Industrial Base Panel of the Committee on Armed Services, The Ailing Industrial Base: Unready for Crises, 1980: 43-44.

availabilities, character, and use, that would affect the capacity of the domestic industry to meet national security requirements.

The investigation is also to consider that a weakened domestic economy could impair national security. So, the adverse impact of foreign competition on the economic welfare of domestic industry has to be measured in a wide variety of ways, including a decrease in government revenues; a loss of skills or investment; or the displacement of domestic products. The Secretary of Commerce is responsible for conducting the investigations and making appropriate recommendations to the president.

Nunn Amendment to the 1986 National Defense Authorization Act. This amendment seeks to improve cooperation in development and fielding of military equipment among NATO nations. This provision was enacted as an attempt to promote the standardization and interoperability of NATO weapons systems and eliminate the unnecessary and duplicate costs of research, development, and production of duplicate weapons. The Nunn Amendment had three basic elements. First, it fenced \$50 million of research, development, testing, and evaluation (RDT&E) funds in each of the services and defense agencies, which could be spent only as part of a cooperative development project with one of our allies. Second, it established a formal mechanism for consideration of such cooperative projects with our allies at the early stages of the DOD acquisition process. And third, it provided the authority to reprogram up to \$50 million in order to conduct side-by-side comparative testing of US systems, subsystems, and munitions with

similar items manufactured by our European NATO allies.

BENEFITS AND DISADVANTAGES OF FOREIGN SOURCING

While there are reasons to be concerned about becoming too dependent on foreign sources in our defense-building process, there are also benefits to be derived from it.

Benefits

Access to the best products and technology. The most obvious benefit to be gained is access to technologies and products that will improve the performance and lower the cost of our defense systems. There are countless examples of foreign firms -- most notably Japanese -- developing or improving on existing technologies to produce higher quality and lower cost products than their US counterparts. This benefit can and should be realized in the defense sector just as it has been in the consumer market sector. As discussed earlier, recent changes in the DOD acquisition regulations have demanded greater cost competition for defense contracts. One result has been increasing reliance on foreign suppliers who are often able to provide quality products at lower costs.

Greater inter-dependence among allies. There is more than a shred of truth in the notion that more inter-dependence with our allies in the US defense-building process will afford us greater long-term security. Virtually all of the foreign sources who supply products and technology to the Defense Department are from friendly, allied countries. These same countries benefit from the

extension of the US defense umbrella to protect those existing alliances. By economically linking our interests with those of our trading partners in building defense systems, there is greater assurance that neither will act in a manner that would jeopardize this increasingly mutual relationship.

Greater standardization of defense systems. A goal sought for years by the US has been greater rationalization, standardization, and interoperability (RSI) among NATO and other allies' defense systems. If practiced mutually and in their collective best interests, the increasing use of foreign products and technologies could help achieve this goal. Greater reliance on foreign sources for some of our defense products will also lessen the perception of some of our allies that US defense trade is a one-way proposition, wherein the US wants only to sell weapons systems.

Stimulate domestic competition. When confronted with the potential loss of individual contracts or market share to foreign competitors for the sale of defense products or technology, domestic companies should become more innovative and productive. However, when adequate underlying economic foundations do not exist, as we have seen over the last decade, this benefit will not be realized. For example, if the extent of foreign government funding, subsidies, and other support to the foreign suppliers cannot be overcome by the domestic company itself, then it is likely that domestic competition will be stifled, not stimulated.

Reduced investment risk. By acquiring products and technology from foreign sources, especially foreign joint-venture partners,

domestic firms can reduce their own investment risks. In joint-venture or co-production arrangements, the work share, technology transfer, and foreign market access agreements can all prove beneficial if the agreements are properly structured.

Disadvantages

Danger of interruption. To the extent that foreign sources are less reliable than domestic sources, uninterrupted production flow is jeopardized. As discussed earlier, if supplies from foreign sources are cut off during an emergency, production of critical defense systems could slow significantly or stop completely. The interruption, or more accurately, the denial, of access to superior foreign technology critical to the development of superior defense systems, could erode the qualitative advantage we have established over the Soviets' weapons systems.

Domestic capacity is reduced. When domestic producers are unable to successfully compete for DOD contracts or shares of the defense market, they will invariably divert their resources to some other endeavor where they can compete. Once the production facilities, equipment, and personnel are converted to another purpose, then that much of the domestic capacity to produce defense products is gone. This is the flip side of the argument raised earlier about the stimulation of domestic competition that results from foreign sourcing. Many domestic companies, particularly the smaller ones, find it increasingly difficult to compete against foreign companies, especially on the basis of cost alone. Their lower

costs of capital, lower labor rates, and government subsidies, among other factors, make many foreign sources tough, often unbeatable competitors.

Development of domestic technology is slowed. It has been apparent for some years that the DOD budget alone cannot provide all of the resources needed to protect and preserve the defense industrial base. Neither can DOD foster all the research and development required to sustain our technological leadership. As was pointed out earlier, competitive, high-volume production, particularly in high-tech industries, is supported by a large and profitable commercial market. As sales and market share of both defense and consumer products continue to slip away from domestic suppliers, the resources available for reinvestment to continue to advance state-of-the-art technologies also shrink. With fewer resources devoted to technology advancement, domestic suppliers gradually lose the technological edge they once held, and they are even less able to compete for future defense contracts. As this process continues across the domestic industrial base, fewer investment risks are taken with the shrinking resources available, so the pace of domestic technology evolution slows.

Foreign sources may exercise their leverage. While perhaps no one seriously believes that the Japanese semiconductor suppliers will stop supplying US companies and begin selling to the Soviets instead, it is food for thought. "Economic pressure is the prime tool of foreign policy influence, which is exerted even against

close allies if necessary."⁷⁹ The US has used its own such leverage on many occasions. In 1956 for example, the US demonstrated its alarm at the British-French invasion of Egypt's Suez canal by withholding badly needed oil supplies from Britain and France.

Another, more recent example can be seen in the Toshiba case. After loud, if not effective, protestations by US congressmen over Toshiba's sale of military technology to the Soviets, the company orchestrated a \$9 million lobbying campaign that succeeded in easing sanctions against Toshiba. Toshiba's message to US lawmakers was simple: a ban on sales would cost the jobs of thousands of constituents. Toshiba's lobbyists coordinated protests by companies selling Toshiba products or using its components under their own labels.⁸⁰ The only sanctions to finally be imposed were a three-year ban on federal government purchases of Toshiba products and a three-year ban on imports of Toshiba Machine Company products.

Even though we may have alliances with all the foreign sources on which we depend for defense products and technology, many of these post-World War II alliances grew out of a threat in which global war seemed more likely than it now does. The broad and sweeping changes taking place in the Soviet Union and Eastern Europe have lessened the perceived threat to the extent that our existing alliances could weaken or deteriorate from the absence of

⁷⁹ Omestad 128.

⁸⁰ Omestad 128.

an adversary. While there may not be hard evidence to substantiate it, there is growing suspicion that the economic self-interests of some of our allies have overshadowed their interest in preserving existing defense alliances, or may do so in the future.

FOREIGN SOURCING AND THE NATIONAL SECURITY DILEMMA

Given that the trend toward an increasingly more global marketplace is irreversible, the task facing policy makers is to insure that we can take advantage of the benefits of foreign sourcing, while minimizing the vulnerability that might arise from it.

The protection of the US defense industrial and technology base is a complex matter. Ninety-five percent of the manufactured goods acquired by the DOD come from a broad spectrum of 215 industries.⁸¹ Further, 185 separate industries have been identified as essential to our national defense.⁸² Clearly, the defense industrial base comprises the same manufacturers that provide goods for the general public. Therefore, any solution to foreign dependence must consider not only the defense sector, but virtually the entire US economy.

Establishing and sustaining a national policy for the protection and development of defense-related technologies is made

⁸¹ DOD, Report of the SECDEF: Bolstering Defense Industrial Competitiveness, July 1988: V.

⁸² US GAO, Industrial Base: Defense Critical Technologies, Aug. 1988: appendix II.

more difficult by the vast and diverse nature of our national economy. Also, there are conflicting needs to have an efficient peacetime defense base and, at the same time, one that is capable of rapid mobilization.

Further complicating the problem is the fact that many federal agencies have jurisdiction over the policies that influence the industrial issues affecting our national security. For example, one might hear the President's Science Advisor call for support of the technology base when the DOD cannot afford such support, or the State Department may advocate sharing technology with our allies, while the DOD is protecting that same technology. This sort of fragmented, even conflicting approach, combined with the intense competition for federal funds serves only to exacerbate the problem. Further, a national security policy affecting the technology base cannot be separated from the civilian economy, since American defense companies are integrated with their commercial counterparts in the sharing of and competition for financial, personnel, and natural resources.

Some analysts contend that US reliance on foreign sources for some of its defense needs is not a new phenomenon, and they all but dismiss the idea that foreign sourcing even for defense products represents any real threat to US national security. After all, the US was dependent on foreign sources for a variety of essential products and technologies during World War II, including key developments in radar, jet engines, and even nuclear weapons. They argue that the US should not be alarmed about foreign sourcing and

urge us to recognize the truth of Henry George's most powerful insight, that "economic nationalism is a policy wherein we do to ourselves in peacetime what our enemies seek to do to us in wartime; namely to block trade and investment".⁸³ Further, they contend that although there may always be squabbles among allies, there is no evidence that the common interests that drew the allies together in World War II, or that have been the basis of postwar alliances, will be more susceptible to dissolution in the near future. Given the growing interdependence of world markets and economies, the opposite may be true.

Almost all discussion of reasons or ways to limit or control the growing dependence on foreign sources, even for defense products and technology, is met with the argument that doing so will inhibit the free-trade principle on which America was founded. Certainly the argument has merit. However, there is ample evidence that our free-trade philosophy has helped lead us to the situation we find ourselves in today with regard to our growing foreign dependence.

By almost any measure, the US has the most open markets in the world. However, our trading partners and allies do not all practice free trade as we know it. Many American scholars, business practitioners, and government officials have addressed our trade relationship with Japan. Peter Drucker has said, "the Japanese do not practice free trade -- they practice adversarial

⁸³ Theodore H. Moran, The Globalization of America's Defense Industries: What is the Threat? How Can it be Managed? Sep. 1988: 2.

trade." Donald Kendall has said, "when it comes to international trade, we're getting skunked by the Japanese because we're playing by different rules ... the Japanese do not practice free trade as we know it."⁸⁴

But this is not an argument for or against free trade. We believe that free trade, consistent with our market-based economy, should be our nation's goal. Nor is it intended to be another Japan-bashing treatment. As one of our most important trading partners, Japan is simply the most visible, perhaps because their approach to trade and long-range industrial planning is the most divergent from what we typically consider to be free trade. But many of our allies and adversaries have recognized the linkage between long-term planning at the national level and the ability of the industrial and technology base to support national security objectives.

In its report, *Defense Industrial and Technology Base*, the Defense Science Board identified the differing approaches to long-term planning used by Japan, United Kingdom, West Germany, and France. Because Japan's is the most divergent from that of the US, and for reasons of brevity, we will limit our treatment of these differences to only the Japanese approach to long-term national economic planning.

The Japanese government supports industry. The Ministry of International Trade and Industry (MITI), which has no US

⁸⁴ Donald M. Kendall, International Trade and Economic Development, C-SPAN Productions, 18 Nov. 1989.

equivalent, conducts effective long-term planning for development of both the defense and commercial sectors. The government supports the defense industrial base through direct subsidies and tax provisions leading to low-cost capital as well as government sponsored R&D.

Companies engage in significantly less competition with each other for defense business than do US firms. Japan has no antitrust laws to prevent joint commercial efforts, and companies often engage in joint research, product development, testing, and coordination of market shares. Japan conducts little defense-specific R&D. The overwhelming emphasis of Japanese research is on applied R&D, or production technology, much of which is applicable to commercial and defense products. And the small amount spent on basic research allows Japan to target more of its R&D to the direct development of products.

Whereas Japan and other nations have defense industrial strategies that they implement as a part of their weapon acquisition programs, the US does not. Unlike many of our allies, the US defense planning process, on the other hand, is not integrated with any national level economic strategy. It is decentralized and short-term in its focus, and manifests itself by emphasizing

- ♦ products over productivity,
- ♦ short-term profit over long-term competitiveness, and

♦ return on investment over market share.⁸⁵

With such an orientation, the US cannot be assured of the advancement of technology on which our deterrence depends. And we face a continued erosion of our industrial base, which puts our long-term national security in jeopardy.

Given the different approaches to national economic planning by Japan and our other close allies, it is unrealistic to expect real free trade, and even free trade as we practice it, from our trading partners. While it is, in our judgement, a less desirable objective, fair trade may be the best we can hope for or expect in the foreseeable future. Faced with the more integrated policies of other nations, and the slow pace of improvements in the GATT process (in the form of increased market access and the lack of enforceability), the US government must now take a more active role to level the playing field. The traditional laissez-faire approach no longer serves our collective best interests.

⁸⁵ Defense Science Board (DSB), Final Report of the DSB: 1988 Summer Study on the Defense Industrial and Technology Base, Volume II, 1988: 14.

CHAPTER 4

RISK MANAGEMENT AND THE NATIONAL SECURITY DILEMMA: THEORY AND ANALYSIS

[O]ur main objective [in joint ventures] is to get information on high technology.⁸⁶

Isao Fukawa, Japanese executive

CONCEPTS OF ASSET RISK AND NATIONAL SECURITY

In this chapter, we provide an analytical construct from which we begin to draw some inferences about foreign involvement as it affects the US economy. Questions about the efficacy of foreign involvement cannot be answered explicitly; there are too many qualifying variables to the puzzle. Therefore, we will implicitly derive a static base from which policy makers can later construct more concrete, dynamic answers.

The graphs that follow outline notional arguments about foreign involvement as a problem in risk reduction. Once we assume that some level of involvement is both intuitively desirable and inevitable, we offer cases where the absence of risk-reduction strategies harmed key US industries. Finally, we analyze the data

⁸⁶ "Japan's Trading Giants Look to the Year 2000," Wall Street Journal 31 Mar. 1986: 1+.

presented in previous chapters for its relevance to our nation's national economic and security interests.

Comparative Statics

The accompanying graph (figure 4-1) simply compares the trade-offs between foreign involvement and the financial risk to investment capital.

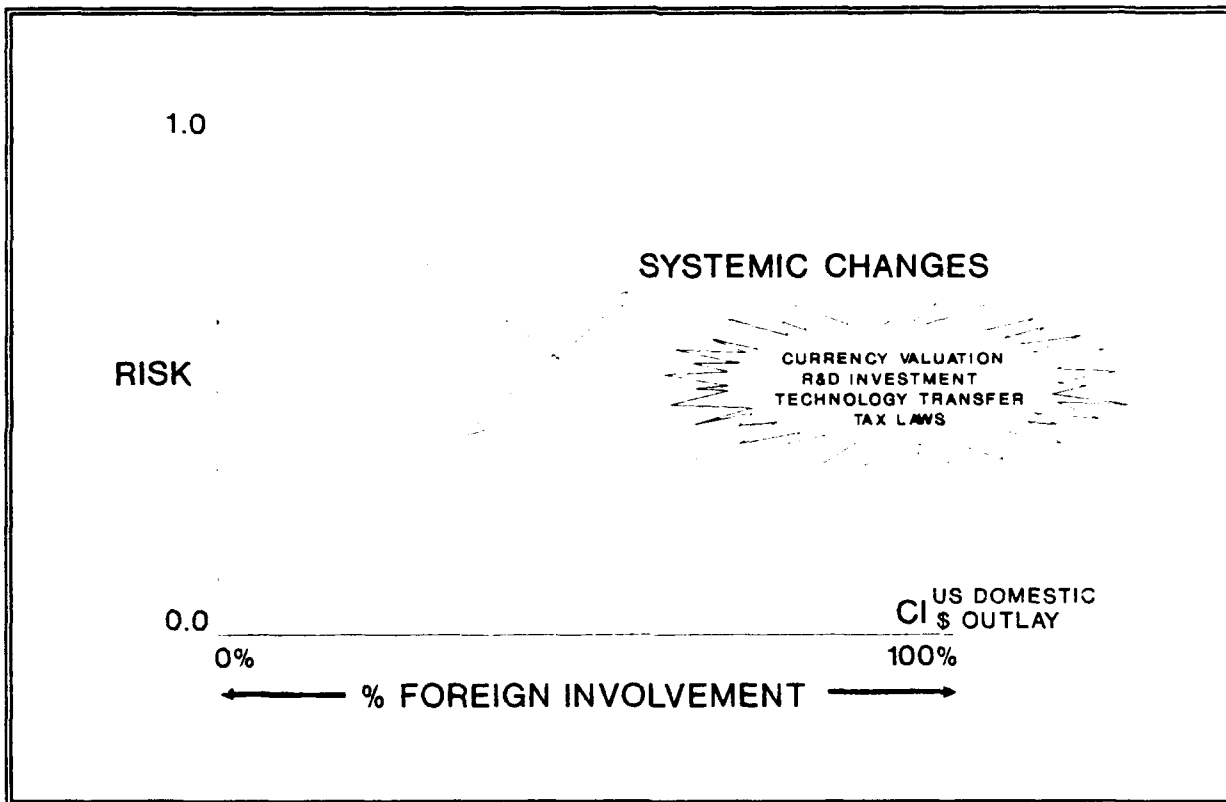


Figure 4-1: Trade-offs Between Foreign Involvement and the Financial Risk to Investment Capital

This concept conveys to policymakers that the level of foreign involvement can be managed even if not to explicit levels. As the level of foreign involvement increases along the horizontal axis, the risk exposure to new investment dollars declines as firms enter joint venture or overseas sourcing arrangements with foreign

companies. This is because the cost of capital and project-specific hurdle rates go down as the risk-sharing effects of these arrangements becomes a factor.⁸⁷

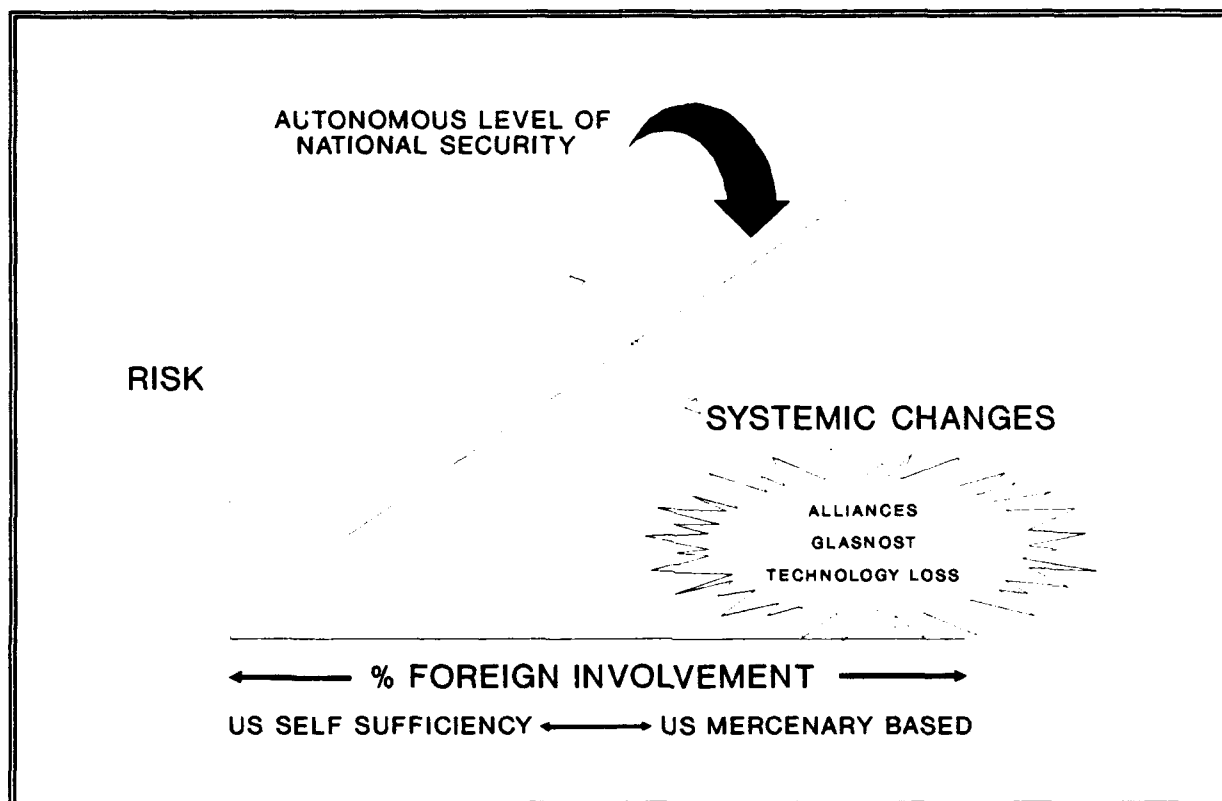


Figure 4-2: Trade-offs Between Foreign Involvement and Risk to US Autonomy

As figure 4-2 indicates, on the other hand, threats posed by unfriendly actors to our perceived level of autonomous national security are plotted across a range of foreign involvement. At the origin, the US is completely self-sufficient and the risk is considered nil. At the other extreme, the US is 100 percent reliant (the mercenary state) upon foreign economic and military

⁸⁷ This is assuming a negligible political risk component in the discount rates used in valuing the project.

power for its national defense. At this level, we consider risks to be high and vulnerability to coercion to be extreme.

Combined into figure 4-3, we begin to understand the conceptual elegance behind connecting financial risk reduction strategies through foreign dependency with traditional notions of autonomous national security. This important portrayal indicates that at some target level of foreign involvement a balance exists between the positive benefits of increasingly less risky defense investment capital and an increasing reliance upon external mercenary arrangements. Prudent foreign involvement makes sense. Systemic shifts in the CI and NS curves will alter the level of perceived risk associated with a static level of foreign involvement. Similar analysis can be performed for other shifts in the CI and NS curves to give policy makers a conceptual model for understanding the market forces and policy choices that might cause changes in target levels of foreign involvement. The determination of these target levels cannot be ascertained explicitly by government, but would really be histograms of possible levels of involvement that seem to satisfy the set of variables that compose the nation's macroeconomic policy.

Let us illustrate how a systemic shift can affect a static level of foreign involvement (PA). Suppose a change in foreign interest rates and inflation causes the discount rates for a joint venture project to increase; then the CI curve would shift to the right. Since existing foreign firms might now have an added political risk premium attached to their costs of capital, the

autonomous security curve shifts left. This is due to the increased possibility of sovereign default, protectionist measures, or other foreign government policies designed to remediate home country difficulties.

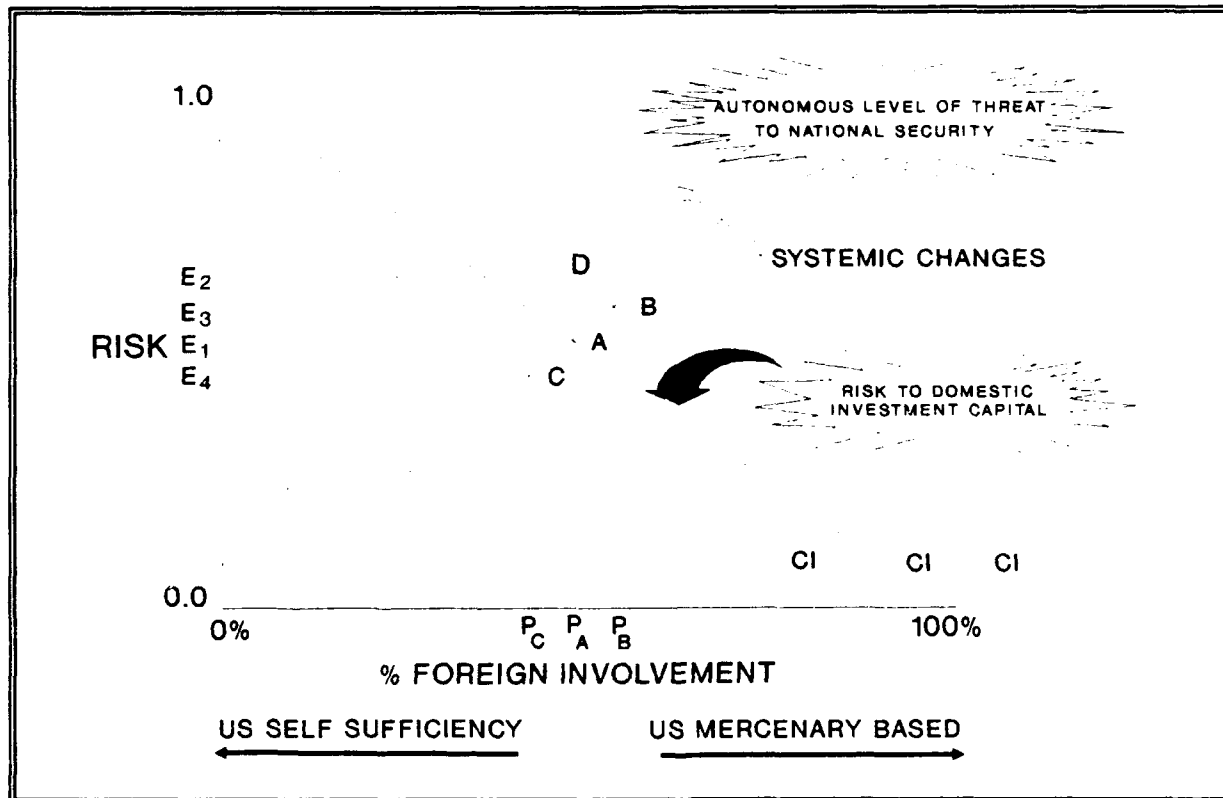


Figure 4-3: Trade-offs Between Foreign Involvement and Risk to National Security

The new state of equilibrium exists, but at a heightened sense of total risk E₂ (rising from E₁ to E₂ at point D). In order to bring the level of risk back to a lower state of equilibrium (where both curves cross), perhaps the percent of foreign involvement will need to rise (from P_A to P_B) as US partners should begin to search for suitable substitute strategies (for example, second sources or additional partners in other, less inflationary economies). Such strategic moves will move the autonomous curve back to the right as

more stable defense arrangements are found, thereby eventually lowering the overall level of risk to national security from E2 to E3.

If there is, in fact, risk associated with this involvement, then how do we determine the appropriate target? As we consider this, the real issue for foreign involvement in the defense process is to what extent can degrees of foreign affiliations be managed. In other words, how much is too little and in which industrial sectors do we concentrate our scrutiny? There are risks with these management opportunities, but correctly selected industrial strategies have the capacity to redesign the way corporate America competes.

Dynamic Diversification Strategies

In a conceptual context, the risk-reward ratio governing the analysis of corporate finance projects is a consideration of how risk determines the level of return demanded for investment dollars. Attempts to reduce corporate exposure to risk come in the form of portfolio diversification strategies, hedging instruments, and other mechanisms that are designed to shift some of the risk to external parties. Joint ventures, foreign sourcing, and foreign investment are examples of management strategies designed to share this risk. They also potentially serve as vehicles for entry into new foreign markets. They are tools a nation has at its disposal in preparing a game plan for sustained competitive advantage.

The private sector exercises its free-market prerogatives

under the supportive policies of government. However, if government policy works to the detriment of American competitive advantage, then the policy must be changed. If the link between performance and environment is strategy, then the selection of these tools must follow a risk-reward model. The use of such a model would allow us to picture the trade-offs associated with the costs and benefits realized from foreign involvement.

If we accept that national security is a public good that is freely traded among nations, then higher levels of return on our national security investment dollars can be gained at acceptable levels of risk by building an efficient portfolio of national security assets. These assets, when combined in the optimal way, can yield a higher rate of return for a perceived level of acceptable risk. Some level of foreign involvement, either through direct investment, sourcing, or joint ventures, is optimal if viewed as one element in our portfolio of national security assets. It is the appropriate combination of national and foreign assets that underlies a nation's ability to protect itself militarily while providing sustained economic competitive advantage. This determination of the correct mix is central to the concept of a national economic security strategy.

Borrowing from modern capital asset pricing theory, this risk-reward trade-off is best illustrated by models developed to show how optimum sets of stocks can be selected (figure 4-4). Here groups of securities can be selected to reduce, or in some cases eliminate, the unsystematic (firm-specific) risk associated with

the investment. In this model, an efficient portfolio can be selected in such a way that higher levels of return can be gained for the same level of risk that is associated with other less efficient groups.

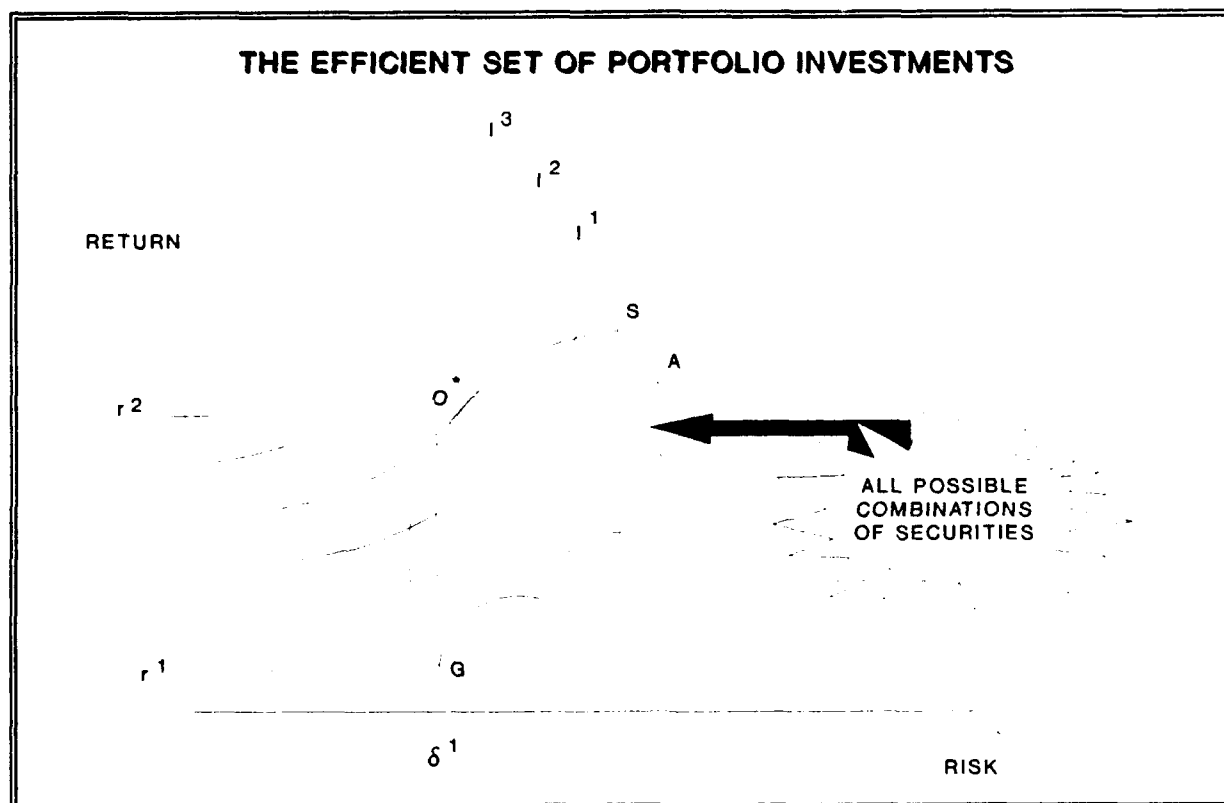


Figure 4-4: The Efficient Set of Portfolio Investments
Source: William F. Sharpe and Gordon J. Alexander, *Investments*, (Prentice Hall: 1990) 155.

The total set of possible securities is represented by the ballooned area; the set of securities that represent the best possible trade-off of risk to return is located on the frontier of the curve G-S. For instance, at point G, a given level of return, r^1 , is achieved for a level of risk σ^1 ; however, there exists another set of securities within the efficient frontier (O^*) that

at the same level of risk gives a higher return (r^2). The various intersections of the frontier with the investor's indifference curves (I1, I2, I3) portrays the optimal level of risk-return for that investor.

In a national security context, the sets of securities are not stocks but are instead sets of national security assets. National security assets are various choices that nations make concerning resource allocation, as well as the strategies designed to carry out our national security policy. In our minds, these assets are more than just weapon systems. Such assets are the physical, human, and political capital that a nation considers part of its defense infrastructure. Examples might include vigorous alliances, interoperable and non-duplicative weapons systems shared by allies, innovative science and technology communities, composite materials technologies, low cost of project capital, joint venture agreements, science and engineering student enrollments. Some assets are more risky than others at varying times due to externals that affect their influence.

The national security-foreign involvement dilemma is essentially about choosing the appropriate mix of these assets so as to efficiently achieve the highest level of return on our national security investment -- for an acceptable level of risk. This simple model indicates the powerful notion that, like stock portfolios, national security assets can be combined, and recombined, in various ways to diversify away some of the risk that

a nation must bear.⁸⁸ For our purposes, foreign investment, sourcing, and joint venture projects are tools by which a nation can construct an efficiently diversified, defense portfolio.

Analysis of Industry Structure

An unfavorable defense industry structure is at the root of the national security dilemma concerning foreign involvement. The deterrents to reduce cost are partly responsible both for the price tags for new weapon systems and the fear that American defense firms will become stagnant. Some would argue that the monopsonistic character of the defense business drives companies to the collusive behavior typified in the government's Ill Wind investigation. Bureaucratic government attempts to discipline the defense industry fail to recognize how badly the one-customer nature of this business distorts the creativity characteristic of free enterprise.⁸⁹ In the defense sector, we do not have a true free market where competition instills efficiency and productivity.

Former Secretary of the Navy John Lehman believes that the non-competitiveness of American contractors can be attributed to the socialistic bureaucracy within DOD and the lack of defense managers' ability to understand cost reduction in the same way

⁸⁸ Non-diversifiable risks would be those risks associated with forces that affect the national security market as a whole.

⁸⁹ Bargaining power of the buyer is unlimited when analyzed using the Five-Forces model developed by Harvard Business School's Michael Porter in his seminal book, *Competitive Strategy*.

their non-defense counterparts do.⁹⁰ Further, Lehman is an unabashed advocate for the free-market forces described above. Labelling his philosophy a Darwinian prescription, Lehman thinks the defense industry should undergo a winnowing of the field of competitors through an LBO (leveraged buy-out) style shakeout. This scaling down would leave us with those firms most suited to compete on a global basis. In essence, this is what Donald Kelly did with Esmark Inc. in the meat packing business; the company grows smaller to ultimately get bigger. Such cost-conscious behavior characterizes the efforts of successful LBO's laboring to pay off huge debts used to finance the transaction. Lehman's point is to adapt this same kind of discipline to the defense industry and let the free market work. Much of Harvard Business School's Professor Michael Jensen's work on the efficiency-enhancing nature of LBO's and management-led buyouts (MBO) may apply to the traditional defense sector as well.

The loss of domestic market share to foreign competitors is seen by protectionists as a natural result of the rise in the level of competition offered by foreign companies. However, the contrary is closer to the truth.

Michael E. Porter of Harvard Business School believes that the rise in intense domestic rivalry is in fact healthy for firms competing across borders.⁹¹ If so, then what matters most to firms is the state of their domestic business. Once domestic

⁹⁰ John Lehman, personal interview, 12 Dec. 1989.

⁹¹ Michael E. Porter, 1+.

rivalry promotes high levels of innovation, then firms can effectively compete in new markets overseas. The issue becomes one of stimulating domestic firm rivalry, not merely excluding more efficient foreign firms from the home market.

Defense Industry Structure and Global Competition

Risk exposure in the US defense industry can be framed by the larger debate over the global competitiveness of US firms in the coming years. Historically, US defense firms often reduce exposure to risk by requiring the government to subsidize the research and development costs of a new weapons technology. Commonly the government does this by paying for R&D, tooling, and plant costs. In the one most recently celebrated case where government did not do this, Northrop Corporation developed the F-20 Tigershark fighter aircraft with its own funds and lost hundreds of millions of dollars when it failed to win the contract. This case indicated that company-sponsored projects are often far too risky to satisfy stockholders interested primarily in return on equity and earnings-per-share forecasts. As a result, given the large pools of risk capital involved in many weapons systems, risk reduction is best carried out by sharing the project through co-venture arrangements with other companies. These agreements allow companies to jointly develop new weapon systems and pool their respective talents and financial resources. The basic premise centers both on risk reduction and upon potential synergies available to make the whole greater than the parts.

In theory, this kind of risk reduction strategy would work if defense companies did not face the monopsony alluded to earlier. In consumer sales, companies have marketing strategies aimed at buyers who will make many product choices over time. In major government programs, the selection of a final contract concept is at the mercy of one buyer. Most times, there is no second chance to sell your wares. The US Air Force's new Stealth fighter, the Advanced Tactical Fighter (ATF), is an example of this kind of arrangement between competing sets of affiliated defense prime contractors. One problem with this particular bidding arrangement, however, is that one set of companies will lose and may suffer substantially.⁹² Why is that an issue, since this sort of risk taking is common in the non-defense sector? The reason is that Lockheed, General Dynamics, or Boeing directly affects our nation's ability to protect itself.

By gambling on an innovative project like the F-20, Northrop stood to lose the farm, so to speak. Recently Gillette, Inc. also announced a bet-the-company project by introducing its new Sensor shaving system product. If Northrop goes bankrupt, the nation loses a storehouse of aerospace expertise that is not easily replicated. If Gillette loses, consumers have many other choices, and the nation's welfare is not harmed. Yet, the creativity and

⁹² This program involves Northrop and McDonnell Douglas versus Lockheed and General Dynamics for nearly \$13 billion in full-scale development funds. Already, nearly \$1 billion spent in prototype development are at risk if the Air Force changes its mind on mission requirements and scales down the design. As of March 1990, ATF will undergo a major aircraft review to determine if a new prototype must be developed.

innovation shown by Northrop and Gillette must be encouraged in the defense industry. The question is does government subsidized defense work stymie this creativity and innovation by discouraging risk taking? It probably does not in pure science and engineering, but it may very well in other areas where American industry has been chronically lacking, areas such as production process control, productivity enhancements, costing systems, applications.

Historical Lessons: The Machine Tool and Footwear Industries

Although arrangements with foreign firms are often cited as risk-reducing mechanisms, several cases have proven to be risky to US businesses. US companies, eager to penetrate new markets by establishing joint and co-production agreements, are facing situations, particularly in Japan, where host government policy works in concert with American joint venture partners to ensnare US technology. Although there are many subtle ways to accomplish this kind of industrial policy, the methods Japan's Ministry for International Trade and Industry (MITI) used in the development of their machine tool industry are noteworthy.

The machine tool industry after World War II was a shining example of American industrial prowess. Yet some argue that an American preoccupation with the status quo, finance, and exploiting short-run gains in overseas markets caused the decline of such American stalwarts as Mesta, Inc. and Houdaille Industries. In hindsight, such losses in technology leadership fueled speculation that foreign companies were engaging in unfair trade practices

while targeting specific industries. Partly due to the shortsighted behavior of US and European firms and financial, legal, and import restrictions imposed by MITI, the Japanese machine tool industry expropriated advanced Western designs for numerically controlled (NC) tooling devices. MITI only allowed agreements that were distinctly in favor of Japanese companies and that promulgated their overt industrial policy. Western machine tool companies exchanged their advanced NC designs for market-opening joint venture arrangements with Japanese firms in the low-tech manual machine tool sector. This kind of venture effectively allowed the Japanese to gain a foothold in the advanced NC industry. Originally US and European firms discovered several years later that the Japanese charged them licensing fees for use of American NC technology.

The American footwear industry serves as another prime example of what lower cost producers can do to dormant domestic US rivalry. In 1968, the footwear industry produced 640 million pairs of shoes, employed nearly 230,000 people, and operated in over 1000 plants. By 1985, the industry was decimated by low-cost foreign imports; over 100,000 domestic jobs had been lost and import market share stood at nearly 70 percent. Industry appeals to government for import tariffs and quotas deflected real remedies to stagnant and unimaginative domestic rivalry. There are some lessons here. Absent a strong domestic rivalry that promotes innovation and risk sharing, our domestic commercial aerospace industry faces a

perilous strategic environment similar to that once confronted by the US semiconductor, machine tool, and footwear industries.

Global Competitiveness and a Current Case

Some argue that joint venture arrangements, as an example of foreign involvement, can reduce the intensity of domestic rivalry by supplanting US producers with new foreign competitors. In the end, by gaining access to our technologies and resorting to unfair pricing behavior, foreign companies drive rival American companies out of business.

The most common criticism levied against co-production agreements, like the one Boeing is anticipating with Mitsubishi, is that American companies are helping to create future rivals at the expense of foregone opportunities to co-produce with American firms. By working with Japanese heavy industry, Boeing may be creating the prospect that troubled many people about the FSX. In that program, transfers from military technologies could foster developments in the commercial airplane industry. Now with Boeing on the verge of an agreement with three major Japanese firms, the synergies available to the Japanese aerospace industry become more apparent. The three primary Japanese companies -- Mitsubishi Heavy Industries Ltd., Fuji Heavy Industries, and Kawasaki Heavy Industries Ltd. -- could become dominant forces in the global aerospace business. A key point to be made is that proponents of the FSX venture with the Japanese cite the lack of adaptability between commercial and military technology. The counterpoint is

that the three Japanese FSX partners are the same three Japanese firms in the arrangement with Boeing. For many observers afraid that Boeing is selling its long-term future for short-term gain, the parallels to the consumer electronics, footwear, and machine tool industries are too obvious.

In Boeing's case, the level of rivalry in the commercial airplane business is not as intense as one might expect. Boeing is the world leader, but more importantly has a dominant position in the US commercial airliner market, with little or no domestic rivalry. In an effort to crack the Japanese market and exclude Airbus Industries from it, Boeing is attempting to walk a tightrope between collaboration and synergistic venturing. "There is no question that when you collaborate with people, there is technology transfer," says Mr. Roy B. Phillips, Boeing's Director of International Programs. Mr. Phillips quickly adds, "the question is how do you do it without compromising your technology lead."⁹³

If domestic rivalry is what helps to sustain competitive advantage, then Boeing may be in trouble. The Japanese over time will exploit the technology and systems integration knowledge they gain from the partnership and may one day supplant Boeing's leadership position. The Japanese government has labeled the commercial aerospace industry as a key future business area and there is nothing wrong with this. The central strategic question is whether an American company should engage in enterprises that

⁹³ "A Japanese Strategy for Boeing," New York Times 3 Nov. 1989: 2.

threaten the long-term viability of a key US high technology industry. Such a joint venture could sell off a key American advantage to a competitor with access to lower cost capital, nonexistent antitrust laws, and cheaper labor.

Analysis of Foreign Involvement and the National Security Dilemma

The mutual interdependence that results from the globalization of the economy is far more than just a military-national defense matter. It fosters increasingly complex relationships that have many political, economic, and social implications as well. Many other macro-level economic factors such as the budget deficit, national fiscal policy, trade deficit, domestic savings rate, worker education/productivity, and others directly impact US long-term national interests. The magnitude of this impact can be managed by carefully constructing a policy that chooses an optimum portfolio of our national assets.

While solving these specific problems is beyond the scope of this paper, certainly they must be dealt with effectively to assure preservation of our national security. The challenge facing our national leaders is to implement policies that allow the US to take advantage of the many benefits of mutual interdependence, while assuring that our national interests are not jeopardized in the process. In addition, the US has the most open market economy in the world, where long traditions of free access to markets make foreign investment a rule rather than an exception. The same cannot be said of Japan or quite possibly of the new European

Community. To face this challenge, we must recognize that foreign involvement is irreversible as a general trend. In this era, longer term US national security interests are subverted by managed trade and investment policies that do not consider the interdependencies in global market.

The number of defense suppliers is shrinking, particularly at sub-tier levels. While exports are a major factor in defense production and account for approximately 15 percent of conventional defense production levels, the US has been losing major defense export markets to foreign competition. As a result, the continued vitality of the US defense technology base and leadership role is being threatened. While many global competitors obtain lower cost capital and other government sponsored incentives to gain market share, American firms confront interlocking rivals, inequitable trade barriers, and inconsistent domestic US economic and legal policies. The implications for US government policy are clear: focus on methods to re-energize underlying, dormant competitive advantages that have historically been the hallmark of US companies. If we recognize the tie between national security objectives and global industrial competitiveness, then an overarching national strategy must emerge in order to ensure our nation's long-term survival.

A primary benefit of foreign involvement in the defense-building process is the reduction in financial risk. New project dollars are expensive in the capital-intensive defense business. Nominal interest rates in Japan, for example, are around 5 percent

compared to US nominal rates hovering around 10 percent. As such, the discount (hurdle rates) used by defense firms are inordinately high when compared to the cost of capital available to many foreign competitors. By laying off new development risks to our allies, US firms can ensure a safer rate of return while garnering access to new technology in the process. By utilizing foreign sourcing, both as prime and sub-tier contractors, the DOD can gain price efficiencies that do not exist in self-sufficient US firms. Another benefit is that joint venturing frees up resources for other projects and helps a company realize scale economies that it would not otherwise obtain. By not having to develop projects by itself, but instead relying on a co-production partner, the US firm is able to put scarce resources into other investment opportunities and expand its activity base.

This paper does not focus on the controversy surrounding the impact stock prices and the maximization of shareholder wealth have upon firm's long-term competitive strategies, but US companies that manage to maintain a high price/earnings ratio are succumbing to the wiles of efficient market theory. Such preoccupation, driven in most cases by the misleading magic of Generally Accepted Accounting Principles and promoted by the threat of hostile tender offers, tends to force corporate managers to manage with a view towards short-term profits. Such a persuasion in many cases will force a company to forego hard choices and remain with a comfortable status quo. Perhaps instead of being forced to focus upon next quarter's earnings per share, and hence stock price,

strategic alliances between mainline US defense contractors could provide the impetus for longer range perspectives. This could happen if US jurists would be realistic about the new global nature of competition and let the intensity of that competition dictate their interpretation of legislation; antitrust legislation protects the early 20th century domestic consumer's welfare and not necessarily today's consumer.

We view the concept of interoperability as another positive feature of foreign involvement. The Nunn Amendment was also designed to create efficiencies within the DOD by disallowing policies that promoted structural disarmament through the kind of non-competitive practices alluded to above by Lehman and others.

As weapon costs escalated, Senator Nunn and others realized that scarce capital was funding duplicative systems. Such multinational arrangements promote the synergies available in shared information about new technology and processes for front-line systems. It is doubtful that leading-edge, basic research is shared, but economies of scale do exist in the sharing of information concerning current generation systems.

Foreign Involvement and Key Variables

If the US were to exploit the risk-sharing advantages of foreign involvement in weapons development, particularly critical DOD technologies (presented earlier), it is important to address several key issues in the relationship. US companies must gain the

benefits of such transfers while avoiding the pitfall of losses in their own key technologies.

Strategic Trade. The strategic use of offset agreements while conducting counter-trade activities can provide US firms with inroads that ripen with age. Offsets allow US companies to penetrate markets that traditionally are closed -- closed for many cultural and economic reasons in both Europe and Asia. Joint venturing can be a principal component of offset agreements with either the EEC or with MITI. By forming US trading alliances that resemble versions of the Japanese *sogo shosha*, we offer foreign markets what they want in scarce products in exchange for offset agreements that allow US firms to establish foreign subsidiaries.⁹⁴ These subsidiaries perform in the local marketplace and gain relationships with foreign domestic companies, thereby gaining access to talent, technology, distribution systems, and market share. General Electric Trading Company has attempted to do this kind of international trading and can serve as an important model for other large US companies or quasi-government agencies. As one Japanese executive for Marubeni, a large *sogo shosha*, stated about joint ventures, "we expect some capital gains, but our main objective is to get information on high technology." Why can the typical US company not do the same?

⁹⁴ *Sogo shosha* are large Japanese trading companies that act as sophisticated intermediaries for the export and import of government approved goods and services. The two largest, Mitsui and Mitsubishi, had annual 1986 revenues approaching \$100 billion.

Transactions Agreements. As was seen in the FSX arrangement with Japan, the writing of the language in the Memorandum of Understanding (MOU) is the pivotal issue. Much of the criticism surrounding MOU's concerns the work/share arrangements afforded US companies, the transfer of sensitive technology, and the creation of potential competitors. While the MOU is the key ingredient, it is seen as a potential problem area only because of concerns that America is not strong enough to bargain and negotiate effectively with our competitors. We must ensure that American firms get as much out of the deal as they give away. The advances that the Japanese have made in phased array radar would help American fighter pilots, so in exchange for US expertise in composites and systems integration, our firms must gain access to it. The real gains from such strategically constructed MOU's are the applications and enhancements that US engineers can apply to a new process, product, or idea. This now becomes more a question of mobilizing our collective political and commercial forces in a concerted effort to prod our firms to seek out the best available technology wherever it is found and then, with the support of our government, to understand the science and the marketplace.

Trade Impediments. While we have Coordinating Committee (COCOM) agreements with our allies controlling the loss of sensitive technology to our adversaries, we have been less successful in our attempts to level the playing field concerning trade and the

sharing of the economic burdens of joint defensive arrangements.⁹⁵ The playing field is not level when it comes to dealing with our major trading partners.

The complexities inherent in national treatment allow methods as subtle as differences in national patent laws to preclude foreign companies from fair competition. In Japan, for instance, domestic firms can expropriate US technology while locking out advances by the original American inventor through patent filings of their own. Such is the case where the government patent office is a functionary of MITI. The Japanese Patent Office routinely allows Japanese companies to file wait-and-see patents around all possible uses of a given technology.⁹⁶ This tactic can virtually exclude US companies from extending product applications in Japan and can serve in the long term to undermine growth opportunities for US companies. Recently, US Trade Representative Carla Hills threatened to use Super 301 provisions of the 1988 Omnibus Trade and Competitiveness Act to break this pattern of behavior on behalf of Fusion, Inc.⁹⁷ At any rate, this kind of country-based barrier poses severe risks of technology transfer to US firms entering into joint venture arrangements with foreign companies.

⁹⁵ COCOM agreements are multinational agreements limiting the export of certain technologies to Warsaw Pact or other adversaries.

⁹⁶ Japan increasingly outnumbers most industrial countries in the number of patents filed, but the number of patents filed in Japan by outsiders is declining.

⁹⁷ They are a small US maker of high-powered microwave lamps who is threatened by the apparent patent fraud of a large Japanese rival.

Although Ms. Hills has been active in attempting to clear away remaining barriers to entry in Japan, Europe, and the developing nations, much more remains to be done. Given Prime Minister Kaifu's own political shortcomings, there has been much talk, but little in the way of effective result. Exclusive Japanese-only business relationships, complex distribution systems, and unfair access for non-Japanese firms in the competitive bidding process for new contracts are several impediments that must be cleared. To this end, President Bush's Structural Impediments Initiative hopes to gain access to market segments in Japan that will finally allow US firms to compete on an equal basis.

Although Japan is cited here, many national differences in other countries also create risky environments for the transfer of US technologies and the future of industrial competitiveness. Even if Clyde Prestowitz is right and Japan is a special case that requires such action, the enormous leverage that it exerts over the US today could be replicated by the impending power of Europe 1992.

In Europe, Secretary of State James Baker proposes to more formally integrate the US into the European Community.⁹⁸ Such participation would break down many of the protectionist measures the Europeans are attempting to erect to consolidate their economic power. Last year's skirmish over local television programming in Europe portended difficulties in forming joint ventures with European companies destined to be all-European in persuasion. If

⁹⁸ "Carla Hills, Trade Warrior," Business Week 22 Jan. 1990: 55.

Baker's proposal comes about, then US firms will have much calmer waters in which to engage in joint venture deals with our European allies.

Agency Concerns. Multiple government agencies, departments, offices, bureaus, and advisors are involved in the policies that affect the defense industrial and technology base. Multiple efforts are underway to deal with various aspects of the national security implications of foreign involvement in our defense-building process. However, many or even most of these efforts are not well coordinated. Each committee in Congress, department in the Executive Branch, or peripheral federal agency analyzes issues with the specific sets of competencies and authorities that are peculiar to it. Attempts at coordinated policy are routinely a piecemeal, bureaucratic effort to ensure that the other agency does not encroach upon one's own turf.

Currently no single group provides high-level oversight of defense strategies as they relate to our nation's economic security base. This business orientation should encompass both commercial and defense sectors in a "macro" sense; oversight should be vigorous enough to ensure that trade policies, industrial competitiveness inducements, and coordinated research efforts provide the goods and services, from all sectors, necessary to equip our armed forces.

Data Collection. Efforts to achieve some level of understanding beyond aggregate BEA data are underway at DOD through such projects as DINET. Within other government agencies, however, there is a curious lack of support for more disclosure of foreign transactions in the marketplace. The public policy issue raised by Congressman Bryant and others concerns the notification process by which the government determines that a transaction involving a national security asset is being considered. In fact, notification today is a system of voluntary disclosure and informal communication between analysts at the Departments of Commerce and Treasury, Washington lawyers, industry officials, and foreign bidders.

Information gathering concerning the potential side effects of a transaction upon a nation's security should not be left to chance. There remains the possibility that a third- or fourth-tier innocuous manufacturer of defense parts could slip from under the CFIUS umbrella simply because it does not get the attention of a specialist at the Commerce Department or other government agency.

Importance of Manufacturing. Although defense manufacturing is presumably protected by existing legislation, the robustness of the manufacturing sector as a whole reflects the nation's ability to compete and survive in the long term. That is exactly what makes the line between the traditional notion of the defense industrial base, with its long-lead-item stockpiles, reserve asset plants, and munitions manufacturers, and the new notion of the economic security base so blurry. A pattern of inadequate long-term

investment by prime and sub-tier suppliers is a primary cause of the deterioration of the defense industrial and technology base. This inadequate investment can be attributed to pressure on defense industries to provide short-term returns equal to those available from lower risk investments. Is this special scrutiny a call for a prioritization of our industries as to their relative contribution to the national security? Is it a sort of industrial policy? No, but perhaps support for such special handling can best be built if the strategic industries can be considered for their effects upon peripheral industries that may not have direct input into the defense-building process.

Manufacturing capability is an important national asset because it contributes to our national security in four distinct ways, according to economist Laura d'Andrea Tyson of the University of California at Berkeley. First, it is responsible for the largest part of our nation's R&D spending, both for commercial and defense purposes. The importance of market-based innovation in domestic marketplaces is tantamount to success in global arenas. Those competitive environments invigorated by strong rival forces between innovative, research, and market-driven companies bodes well for the nation's long-term vigor. Productivity growth is the second factor that points to the importance of the defense manufacturing sector. In competition with lower cost foreign competitors, real increases in US workers' wages can be offset through increases in productivity. Without this attendant growth in productivity, higher wages mean that defense manufacturing firms

are not particularly attractive investments, especially in an era of declining defense budgets.

The third reason lies behind the importance of the manufacturing sector to our trade accounts with other nations. The much heralded trade deficit is largely due to the decline in the export of our manufacturing products; manufacturing exports far outweigh service or agricultural products in US exports. Perhaps more importantly, the DOD spent over \$165 billion in 1985 in support of our manufacturing sector. The textiles, transportation, armaments, electronics, metallurgical, chemical, computer, plastics, semiconductor, apparel, and agriculture industries are all important national security assets. According to Harvard and Stanford professors Hayes, Wheelwright, and Clark in their book *Dynamic Manufacturing*, the management in charge of these industries must provide leadership that is dedicated to making the companies in these industries the best in the world at what they do, much the way Jack Welch has forged such a vision for each of General Electric's product lines. This clear indication of the relative importance of the manufacturing sector to the support of our armed forces is enough to warrant special handling.⁹⁹

Technology Spillover. Based on US Department of Commerce data, foreign firms control nearly 13 percent of US industrial assets. Why is this figure alarming to some people concerned with traditional notions of national security? A competitive industrial

⁹⁹ "Business, Economics, and the Oval Office: Advice to the New President and Other CEOs," Harvard Business Review Nov.-Dec. 1988: 103+.

and technology base is essential to deterring aggression and, should that fail, to winning wars. Foreign sourcing of defense products is now relatively small compared to the total number of defense companies and the total defense purchases. Both have been increasing their share of the total US economy. The size of the phenomenon, however, is less important than the nature of this growing foreign dependency.

Professor James Quinn, of Dartmouth College, postulates that the real importance of technology is the multiplying effect it has on the home economy, the intensity of rivalry between competitors, and on the market-driven forces that influence the flow of ideas and innovation between competing nations. The drive for technological advance is so important that no nation can internally develop all of the technology it needs, but rather must protect those resources it owns and import those that it lacks.

For instance, much of the R&D conducted in the microelectronics field has spillover effects into a host of industries that rely upon such technology for advanced automation and productivity. Yet, US government spending in support of commercial R&D has dropped nearly 95 percent in the last 20 years; public expenditure as a percentage of GNP is the lowest of any advanced nation in the world.¹⁰⁰

Consortiums like Sematech and US Memories, if imbued with a coherent and purposeful strategy, can do much to foster the

¹⁰⁰ Robert Reich, "Who is Us," Harvard Business Review 1990: 60.

effective translation of technologies from one market to the other.¹⁰¹ This concept is crucial in developing the idea of a national strategy for industrial competitiveness and security that we have posited throughout this paper.

Mergers and Acquisitions Opportunities. Usually overlooked in the national security debate, another area of concern is the increasing integration of the world's financial markets and the number of undervalued defense firms. With a weak dollar and the help of profit-hungry investment banks, many insiders feel that foreign raiders could be looking to purchase US manufacturing assets, both defense and non-defense, and fuel further gains against rival US firms.

To that end, recent announcements by Wasserstein & Perella (a prominent Wall Street investment banking firm allied with Nomura Securities of Japan) heightens fears that the capital-heavy Japanese are in the US mergers and acquisitions market at a time when many US defense firms are undervalued.¹⁰² Table IV-1 shows the influence the Japanese can exercise with leading US investment banks. These investment banking firms are largely responsible for providing information on the health and well-being of defense and other manufacturing firms.

¹⁰¹ Sematech is a consortium of some 14 major US semiconductor makers. Its purpose is to conduct R&D in advanced semiconductors. The program is supported by both private and government funding. DOD provided \$100 million each for FY88 and FY89.

¹⁰² "Japan's Appetite for US Mergers," New York Times 27 July 1989: 1.

JAPAN PUTS MONEY IN WALL STREET FIRMS

(Amount in millions of US dollars)

JAPANESE COMPANY	US FIRMS	AMOUNT/STAKE
MINORITY INTEREST IN THESE INVESTMENT BANKING FIRMS		
NOMURA SECURITIES	WASSERSTEIN, PERELLA	\$100/20.0%
NIPPON LIFE INSURANCE	SHEARSON LEHMAN	\$538/13.0%
SUMITOMO BANK	GOLDMAN SACHS	\$500/12.5%
YASUDA MUTUAL LIFE	PAINE WEBBER	\$300/18.0%
YAMAICHI SECURITIES	LODESTAR GROUP	N.A./25.0%
CONTROL OF THESE GOVERNMENT SECURITIES FIRMS		
SANWA BANK	BROPHY GESTAL KNIGHT	\$ 75
LONG TERM CREDIT BANK OF JAPAN	GREENWICH CAPITAL MARKETS	\$144
INDUSTRIAL BANK OF JAPAN	AUBREY G. LANSTON	\$234

Table IV-1: Japan Puts Money in Wall Street Firms

Source: "Japan's Appetite for US Mergers," New York Times 28 July 1988.

In a 20 September 1989 *Washington Times* article, Paine Webber, Inc. revealed that they are looking to the defense industry as a source of undervalued targets for takeovers. In fact, Mr. Mike Metz, of Oppenheimer & Co., believes that General Dynamics, Grumman, and United Technologies might be put into play since their stock prices are trading below their asset values. For example, General Dynamics was recently trading at less than eight times earnings, well below the average for NYSE blue-chip stocks.¹⁰³

Although a foreign takeover attempt of General Dynamics would

¹⁰³ "Heard on the Street," Wall Street Journal 21 Sep. 1989: 1.

provoke loud public outcry and invoke existing industrial security laws, there are many smaller, lower-tier contractors engaging in both defense and non-defense work that could be prime targets.

International Financial Markets. Another area of major concern deals with the integration of capital markets around the globe. The growing interdependence is heightening fears that foreign nations, particularly Japan, can exercise undue and misunderstood influence upon US policy by manipulating US domestic asset values through our organized securities exchanges. Specifically, the interdependencies that exist between the buying and selling of various financial instruments and their derivatives have not been studied as a potential source of control by foreign interests.¹⁰⁴ For example, the positive correlation between Tokyo's Nikkei average and the Dow Jones Industrial average is striking (see figure 4-5).

This kind of connectivity, given continued Japanese large-scale purchases of US Treasury securities, Japanese threats to dump those same securities in the face of US trade barriers, and the unexplained movements in the stock, stock index futures, and options markets during the October 1987 NYSE crash, gives rise to increasing fears that our financial system can be held hostage to forces outside our control.

¹⁰⁴ Futures, forward contracts on foreign currencies, options, indexed instruments, and other synthetic instruments, for example, are simultaneously traded on major world exchanges.

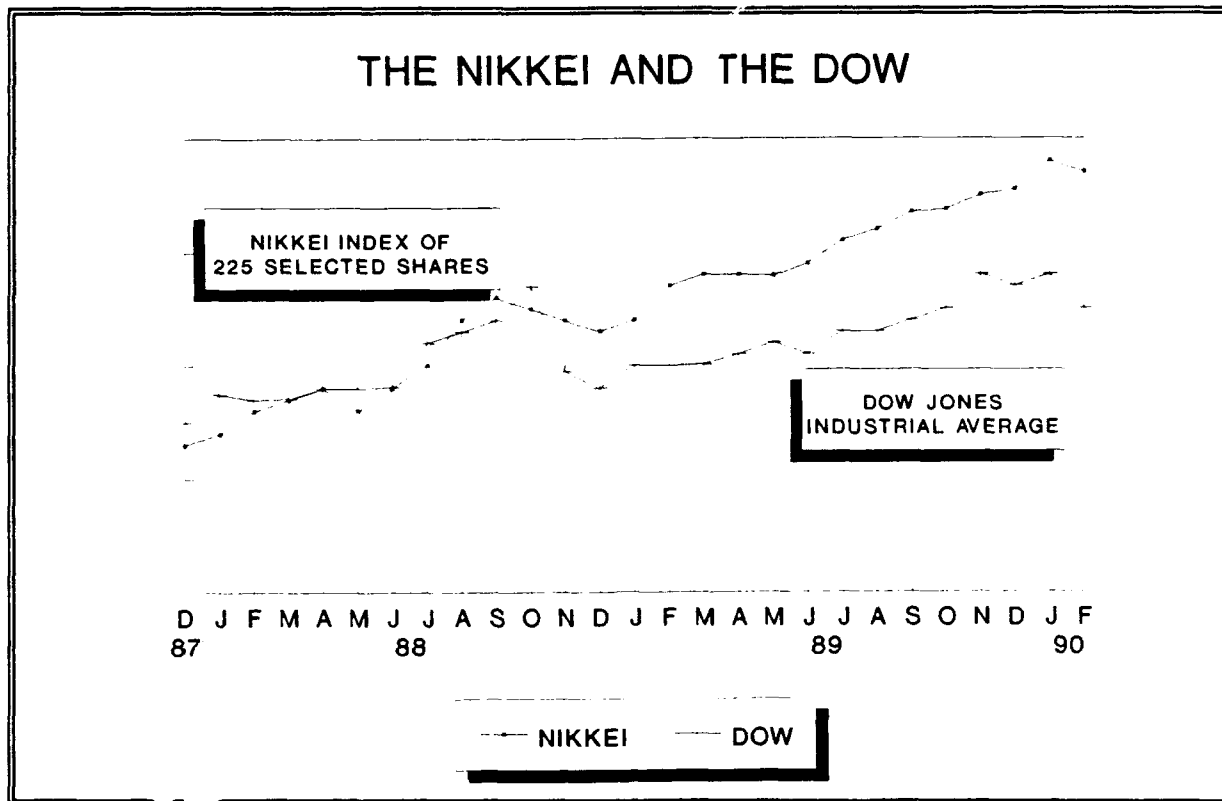


Figure 4-5: The Nikkei and the Dow

Source: "When Japan Gets the Jitters, the World Trembles," Business Week 12 Feb. 1990.

In the Presidential Task Force on Market Mechanisms, January 1988, concerns about inexplicable credit gridlock and the fact that the "dynamics of trading in stocks and futures had become dysfunctional" pointed to a subtle but alarming conclusion: given the fact that all of these seemingly disparate markets were in fact one market, knowledge about what was causing the meltdown could only be discovered ex post. The speed, volume, and dislocations of derivative markets took our country's best financial wizards by surprise and they did not know how or why it was happening. "We came as close to a financial meltdown as I'd ever want to see," says John Phelan Jr., chairman, New York Stock Exchange, of the

stock-market crash of 1987.¹⁰⁵

What scares some national security strategists is that these linkages between derivative and underlying securities markets are coming under the manipulative influence of foreign entities not necessarily aligned with US foreign and domestic policy interests. To this point no credible source is advocating that there is a planned, covert conspiracy to undermine US strategic interests by manipulating the capital engine that drives the US economy, but a few people now recognize that the opportunity is there for just such leverage. That is an unacceptable point of vulnerability.

Vested Interests in Foreign Investment. Recently many interest groups outside of government are beginning to discover the interdependencies that exist between the level of foreign investment in the US, the infusion of foreign products, and overall US competitiveness and productivity. Groups competing for their own constituencies, both foreign and domestic, are in many cases influencing national economic and trade policy to their own liking. Interwoven as they are with macro-/micro-economic theories, competitiveness issues are convoluted and difficult to grasp.

For example, how does the US balance fears about transferring technology to its competitors, the trade deficit, and foreign ownership of important defense firms with a desire to decrease inefficiencies in single-nation production of similar weapons, profit-centered short-term business interests, a need for foreign

¹⁰⁵ 1988 Presidential Task Force on Market Mechanisms, 1988: 4.

investment capital in US businesses, and foreign ownership of US Treasury securities? Beyond those esoteric factors, as long as the US personal savings rate remains low, real interest rates remain high with a strong dollar, and government spending remains at alarmingly high levels, the US needs to fund its budget deficit with foreign capital.

The Japanese now own nearly 10 percent of US banking assets. Upset that US ownership of Japanese assets has slipped in 1989 to 1 percent, Senator Riegel of Michigan is urging the Congress to retaliate until Japanese banking barriers come down. However, other policy makers act as if the deficit is a benign symptom that can continue to be supported by friendly foreign investment. For example, the *Wall Street Journal* reported that the US Treasury is reluctant to apply pressure because these same Japanese banks are funding the deficit.¹⁰⁶ Intense lobbying on behalf of Japanese banking interests will no doubt result in efforts to mitigate the effects of any congressional pressure.

The editor of *Fortune*, M. S. Forbes Jr., extols the virtues of foreign investment and trade. He argues that instead of a national security issue, the merchandise trade deficit is "part of a process that is strengthening the US."¹⁰⁷ He argues that efforts to devalue the dollar to help the trade deficit, raising domestic taxes, and erecting trade barriers would do more harm than good and produce a stagnant US economy. While much of what he says is true,

¹⁰⁶ "Business Bulletin," Wall Street Journal 9 Mar. 1990: 1.

¹⁰⁷ M.S. Forbes., "Unfounded Fear," Forbes 13 June 1988: 25.

it is not that foreign investment is inherently good or bad, but that the lack of oversight is foolhardy.

Others like Elliot Richardson, general counsel to the Association of Foreign Investment, also believe that the inflow of foreign investment is a necessary prerequisite for US growth.¹⁰⁸ Mr. Richardson believes that foreign investment in the United States is a benefit if one views the US economy as an aggregate stock market. In that case, foreign investment capital flows to the US because it is the place where the risk-reward ratio is highest. It simply makes sense for foreigners to invest here. It also can provide stimulus to our economy and in so doing provide growth, jobs, and needed research and development dollars.

Vested interests sometimes work at cross purposes to the national interest. We have already cited the blatant lobbying on behalf of Toshiba; why weren't heavier sanctions imposed? Policy initiatives like the Nunn Amendment attempt to create some economies of scale with our allies in the development and production of similar weapon systems. Yet vested interests create controversy over attempts by General Dynamics Corporation to sell the F-16 derivative (FSX) to Japan.

The arguments were heated over whether such a cooperative agreement was going to promote Japanese aspirations in the commercial aviation business. Some like Clyde Prestowitz and Bernard Schwartz think that allowing such indiscriminate buying of

¹⁰⁸ "Why Foreign Investment in US is Good for Us," New York Times 8 June 1988: A38.

American technology serves to undermine US interests.

Employment and the Skill Base. Foreign involvement could have negative effects upon the US employment and skill base. What matters most to ordinary citizens, not well versed in the polemics of international trade and finance, is whether or not a job is available. Referring to the possibility that Japan might choose to produce the FSX alone, proponents of the deal believed that some of the pie was better than no pie at all. This translates into short-term business for General Dynamics and jobs for its workers.¹⁰⁹ However, real effects of foreign involvement, whether through joint ventures or direct investment, upon employment of the US work force are varied. Some analysts like E. Graham and P. Krugman of MIT believe that foreign controlled firms in the US compare favorably with US-owned firms in terms of wages and productivity, and increase the number of local jobs.

What is sinister about foreign firms, however, is that, though local jobs may increase, they often do not call for the skilled labor that tends to improve the overall health of the American work force. Many studies, including the recent book by Glickman and Woodward, show that research and middle management jobs were reserved for foreign employees while many American workers were forced to take lower skilled jobs. Because some foreign firms tend to rely on previously established supply relationships, there is evidence that further down in the supply chain, domestic US

¹⁰⁹ Charles M. Farr and Thomas P. Griffin, "The FSX Debate: Implications for Future US International Armaments Programs," Program Manager July-Aug. 1989: 2+.

companies could experience negative effects.¹¹⁰ Such effects can cause some domestic firms to lose business and resort to layoffs. The result is that foreign involvement has created only a small increase in aggregate employment and not the deluge cited by proponents like Mr. Richardson. In fact, if you ignore employment effects from acquisitions of existing US firms, there was a net loss in jobs of nearly 56,000 between 1982 and 1986.¹¹¹

Joint venture arrangements that move a portion of the work share abroad will undermine the long-term health of key second-tier industries like the aerospace supplier industry. In the end, joint venture and foreign investment strategies might eventually lead to a net loss of skilled defense-related jobs through attrition of US companies. Instead, critics argue, American firms should form joint ventures with domestic rivals and seek to penetrate overseas markets with the full force of US inventiveness and technology; they must be willing to sustain short-term losses for longer term rewards.

Prescriptions for US Policy Regarding Foreign Involvement

Much can be learned from the Japanese model of industrial policy. That is not to say that we need an American version of what is culturally and historically a Japanese phenomenon. What does make sense for America, however, is to exploit those competitive strengths that have long been hallmarks of American

¹¹⁰ According to Glickman and Woodward, this can be seen in the automotive industry.

¹¹¹ Glickman and Woodward 265.

business: innovation, a willingness to compete, quality conscious and customer-driven behavior, and a search for opportunity. It is government's role to make such a situation easier rather than more difficult.

We agree that foreign capital tells us that foreigners view the US as a good investment and that demand for US assets is larger than our demand for their goods, and that helps to prop up the dollar. However, efforts to "manage the dollar down" to help the trade deficit ignores much-needed tax and productivity incentives that make US businesses more competitive. The health of the defense industrial and technology base depends upon farsighted changes to tax, trade, environmental, and socioeconomic policies.

Academic affinities for purely free trade obscure real problems. In a better world, the concept of purely free and open markets is a good one. But as long as comparative disadvantages outweigh such notions, some nations will engage in managed trade themselves. The US should continue market-opening efforts, but we must also invoke trade incentives that prod our own economic competitiveness. While the efforts of US officials in the COCOM, the GATT, and in bilateral trade negotiations have certainly helped to improve the equity of international trade practices, they have not gone far enough or fast enough. Uncoordinated effects of national economic and defense acquisition policies further reduce the ability of US firms to compete within a global arena. Increasing uncertainty surrounding the defense budget and acquisition process, the capital markets' perception of an

imbalance between the risks taken and the possible rewards in defense business are all symptomatic of a larger national security dilemma.

The term Yankee ingenuity simplifies a prescription for American industrial competitiveness. Joint venture arrangements, both with foreign and domestic firms, can be the vehicle by which American industries can become reinvigorated with new ideas. So can foreign sourcing, if the contract provides access to the product or process that makes it so attractive. Foreign investment, joint ventures, and overseas sourcing are not new, but the urgency about our declining lack of competitiveness is. These should be handled quid pro quo; the structure of the relationship is everything.

The leverage that each partner brings to the deal is based upon the competitive position that each firm controls. If the foreign partner holds US market interests hostage, then it becomes a point of negotiating leverage. Such leverage was used in early US-Japan ventures in the machine tool industry, for example. Whether the US can extract more from any deal than it gives up depends upon its ability to hold foreign interests hostage. Vulnerabilities to foreign leverage will occur when foreign involvement provides the only source of a desirable product or technology. In that case, the US will bargain from a competitive disadvantage unless it can exact reciprocal licenses or market access.

Until the US more vigorously exercises its sanctions under existing trade law, US firms will be at a leverage disadvantage trying to break into well-coordinated EEC and Japanese trading groups. The search for new technology and its application should be on every American firm's agenda, and it is in the best interest of the US government to promote such worldwide aggressiveness.

Such a tactic would promote domestic rivalry, create technical innovation, capture new markets for US firms, and sustain comparative advantage. Such a long-range, US government-backed policy of technology gathering, wherever it is to be found, by US firms would produce the kind of spillover effects into domestic industries alluded to earlier. US public policy in this area is fragmented and has not produced the dynamism shown by MITI in promoting our own American-based advantages.

With this analysis as a backdrop, we now turn to specific conclusions and recommendations concerning ways to manage our national security portfolio under the influence of foreign involvement.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

An organization without coherent policies becomes dysfunctional; policies without an efficient coordinating and implementing authority become diffuse and uncertain.¹¹²

John Heinz, United States Senator

CONCLUSIONS

We believe the preceding chapters clearly show a trend toward increasing foreign involvement in the US defense building process. If allowed to continue unconstrained, foreign interests will have a greater opportunity and reason to influence US political, economic, and military policy. While we cannot determine with certainty how such involvement will ultimately affect our national interests, we believe it gives ample cause for concern. It cannot be in our best national interest to become so dependent on foreign interests for products, technology, or capital that these sources can gain undue influence over our autonomy or sovereignty. Our capability to build and sustain our defense systems without coercive economic or political influence by other nations or

¹¹² John Heinz, "Export Administration Act of 1990," Statement introducing bill to the US Senate, 25 Oct. 1989: 1.

foreign interests is essential for our long-term national security. The following are major conclusions that affect our recommendations concerning foreign involvement in the US defense building process.

- ♦ Globalization of the world economy integrates industrial competitiveness issues with national security concerns.
- ♦ Foreign involvement in the defense process is growing and is necessary but should be integrated into broader economic concerns.
- ♦ Jurisdictional approach to policy works against a national economic security agenda.
- ♦ Traditional notions of national security do not adequately embrace economic security issues.
- ♦ Manufacturing capability must be a national priority.
- ♦ Spillover effects of technology enhance competitiveness.
- ♦ Data collection/dissemination concerning foreign involvement is inadequate to support US national security interests.
- ♦ Foreign sponsored interest groups influence national security.
- ♦ Existing laws, rules, and regulations are generally adequate to deal with foreign involvement and national security except for antitrust and tax laws, which require more conceptual reevaluation.

The National Economic Security Infrastructure should adopt a comprehensive policy model for United States Trade and Competitiveness. This model incorporates changes to the structural impediments that typically circumvent the execution of good policy in Washington.

RECOMMENDATIONS: A PRESCRIPTION FOR CHANGE

If we are to minimize the vulnerabilities arising from the growing foreign involvement in our national economic security, we must reconsider the incremental and jurisdictional approach we have traditionally taken. Structural and policy reforms are needed to deal with the increasingly complex economic security issues.

Structural Recommendations

The foundation for our recommended structural changes is United States Senate Bill S1796, the Export Administration Act of 1990. This bill was introduced on 25 October 1989 by Senator John Heinz. As implied in S1796's title, this bill is aimed primarily at export control, management, and administration. It creates the Office of Strategic Trade and Technology (OSTT), a new cabinet-level organization with responsibility for formulating and administering coherent export control policies. Various tasks currently performed by other governmental departments would be consolidated into OSTT.¹¹³ Finally, it would establish new elements to deal with chemical, nuclear, and biological non-proliferations and economic security issues. The economic security aspect of this bill captured our interest.

As written, S1796 does not contemplate an extension into all the economic security matters addressed in this paper. We believe, however, that with some broadening this bill will help resolve these issues. Our discussion of S1796 will encompass only those

¹¹³ There are many departments involved to some degree in the export control business, including the State Department, Department of Defense, Commerce Department, and Energy Department.

aspects that relate to and are necessary for an understanding of our recommendations.¹¹⁴

US Senate Bill S1796. US Senate Bill S1796 is based on two precepts:

- ♦ reforming the entire process by which we control technology,
- ♦ refocusing our understanding of technology policy in an integrated perspective that better reflects the role economics plays in national security.

The centerpiece of S1796 is OSTT, which would be organized as shown in figure 5-1.

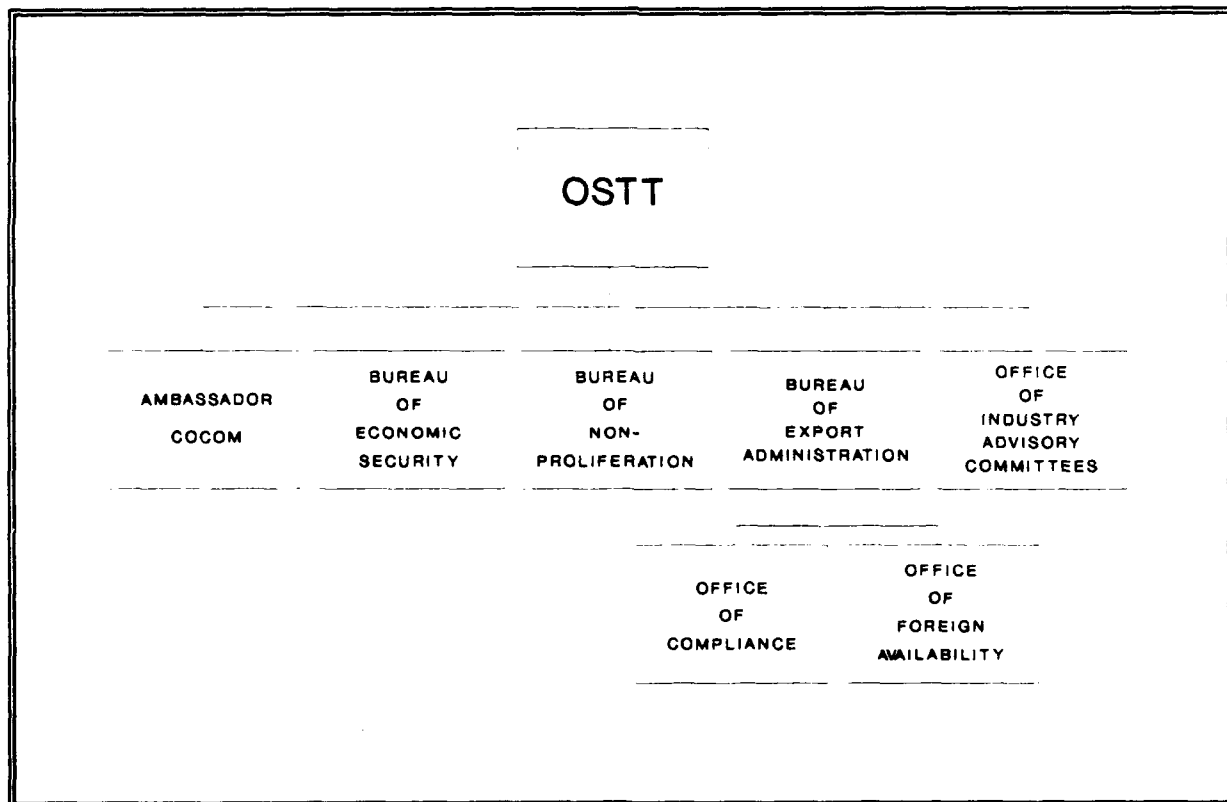


Figure 5-1: OSTT Organization Chart
Source: Export Administration Act of 1990.

¹¹⁴ Section 15 of S1796, which describes the OSTT, can be found in appendix B.

The bill would transfer to OSTT the following:

- ♦ all authorities and functions granted the President by the Arms Export Control Act-1949,
- ♦ all authorities and functions under the Export Administration Act of 1979,
- ♦ all authorities and functions under the Defense Production Act,
- ♦ all authorities and functions under Section 232 of the Trade Expansion Act-1962,
- ♦ the various elements currently within other departments that have a major role in export administration.

Office of Strategic Industries, Technologies, and Trade (OSITT).

Using the OSTT organization as a framework, we recommend it be expanded beyond its envisioned external, export control function. It should also include an internal component that would formulate economic security strategy and enhance domestic industrial competitiveness. The name of this revised organization would be the Office of Strategic Industry, Technology and Trade (see figure 5-2).

To accomplish these broader responsibilities, the following additions, deletions, modifications, and enhancements are suggested:

- ♦ Add another precept to those that are the basis of S1796. It should reflect the role of government to foster industrial and technology competitiveness as the foundation of our national economic strength.

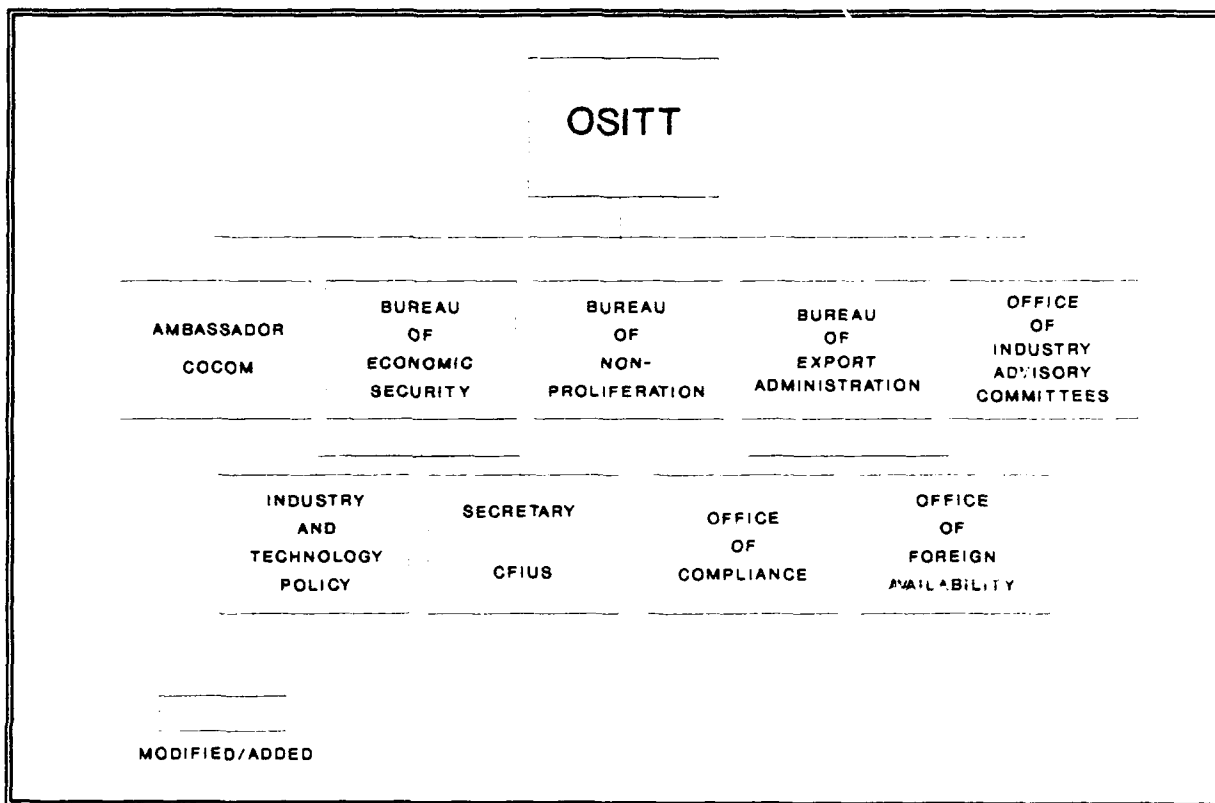


Figure 5-2: OSITT Organization Chart

Source: Export Administration Act of 1990 & Authors

- ♦ **Revise the functions of the Office of Foreign Availability (OFA).** The primary function of this office is to provide assessments of whether certain products are freely available to other countries. These reviews then serve as the basis to emplace or remove controls on the export of such products by US firms. We believe the role of the OFA should be expanded to also include the responsibility to track the emergence and development of technologies in other countries. It would also provide data and analysis on the concentration of foreign sources.
- ♦ **Modify the functions of the Office of Industry Advisory Committees (IAC).** This office would oversee the various

industry committees that would be formed to provide high-level private sector input for the formulation and execution of national security export control policy. In keeping with the concept of a "Board of Knowledgeables" as suggested by the late Malcolm Forbes, the role of such advisory committees could be expanded to include input regarding industrial competitiveness issues.¹¹⁵

- ♦ **Expand the role of the Bureau of Economic Security (BES).** This bureau addresses the industrial and technology base, foreign investment, the Defense Production Act, and short supply and anti-boycott issues. It also functions as an advisory group concerned with how national security considerations should influence economic policy and the decision-making process itself. We believe the need for such a bureau to perform this function has been clearly demonstrated in this research paper. We recommend that the role of the bureau be expanded in two ways. First, since the BES will address foreign investment, it seems prudent to transfer the responsibility for the oversight and operation of the CFIUS out of the Treasury Department. Doing so will not alter the established operation of the CFIUS, nor will it displace the Secretary of Treasury from membership. It will, however, establish the Director of OSITT as the Chairman of CFIUS and therefore responsible for coordination of the CFIUS review process within the Bureau of Economic Security.

¹¹⁵ Glickman and Woodward 282.

Secondly, we recommend the creation of an Office of Industry and Technology Policy. This office will perform essentially as the advocate for industrial competitiveness. It would assess the condition of domestic industries, the emergence of domestic technologies, the impact of foreign import penetration, and formulate strategies and recommendations aimed at enhancing the competitiveness of US industry in the global market.

- ♦ **The Director of OSITT would be a Presidential appointee.** This position, approved by the Senate, should have a cabinet-level status similar to that of the US Trade Representative. As such, the Director would be accorded membership on the Economic Policy Council, the Trade Policy Council, the Competitiveness Council and other such bodies as are appropriate.
- ♦ **Eliminate the Strategic Trade Policy Council (STPC).** S1796 creates the STPC to approve export control policies, technology transfer policies, and unified control lists when submitted by the Director of OSTT. We do not believe such a policy council is necessary. The proposed membership of the council would include basically the same cabinet officers who already sit on other closely related policy councils. When the policies promulgated by the OSITT require such cabinet-level council approval, they should be introduced to the appropriate existing council.

Summation. Creating another organization hardly seems to lessen jurisdictionalism, but we believe it will significantly improve the coordination and integration of related policies, at least within the Executive branch. While it may improve the integration of policies, that alone will not resolve all the issues. Many other actions must be taken to effectively deal with both dimensions of the foreign involvement concern we have raised.¹¹⁶

Policy Recommendations

There needs to be a presidential statement of policy. In the process of creating an Office of Strategic Industry Trade and Technology (OSITT), the President should issue a National Competitiveness Agenda¹¹⁷ to include increased emphasis on ways to bolster our nation's industrial competitiveness and recognize the relationship between economic and national security.

The national security community must redefine national security to include economic security. Much of the data presented in this paper points to the overwhelming need for and beneficence of foreign investment in the US economy. A new definition of national security must include the realities of global competition and the importance of industrial competitiveness. This new reality is built upon the belief that America's traditional methods of

¹¹⁶ Although beyond the scope of this paper, a similar jurisdictionalism exists within the Legislative Branch, which should be the subject of another study.

¹¹⁷ This should not be viewed as a *national industrial policy* where industries are listed in order of priority and picked as winners or losers.

protecting its defense industrial base have already eroded. Many industrial capabilities that the US needs to fulfill its defense commitments already reside offshore, are no longer present in many American firms, and are increasingly intertwined with the research and development efforts of commercial companies both here and abroad -- commercial firms attempting to compete in difficult competitive environments.

Government and industry should recognize that national competitiveness is a national security issue. The declining state of US industrial competitiveness is a national security problem. The OSITT should develop a national defense (economic security) industrial strategy that will ensure that US industry remains competitive globally, technologically advanced, and possessing the appropriate manufacturing capabilities to support our national security strategies, objectives, and mobilization requirements. American competitiveness is a key component of our ability to create new national wealth and increase our citizen's quality of life. While Robert Reich is correct in emphasizing the importance of the American worker, the combination of a skilled domestic work force and incentivized US tax-paying American companies, wherever they operate, is the essential ingredient in the sustainable creation of US wealth.¹¹⁸ American companies, wherever their subsidiaries reside, hold their primary fiscal allegiance to this country, and that is a precise enough definition of national loyalty for purposes of determining American competitiveness. A

¹¹⁸ Reich 129.

policy encouraging international joint ventures with major industrial nations should entice American companies to seek out the world's best available technology or business practice and adapt it for their own use.

The OSITT infrastructure should coordinate the following policies across all appropriate agencies:

- ♦ special investment tax credits for defense companies applying defense technology to commercial purposes, joint venture arrangements with foreign firms, and for commercial research and development.
- ♦ broader interpretation of antitrust laws to allow more vigorous production and research agreements within industry groups.
- ♦ formation of US trading companies to promote penetration of overseas markets and to consolidate US market opening efforts.
- ♦ support for national research consortiums with formalized agreements for information sharing between universities, government defense laboratories, and commercial and defense companies.
- ♦ taking a lead in identifying shortfalls in the US educational system that will have an impact on our competitiveness and national security. Many reports and studies indicate that the nation's school and university programs do not produce the skilled and technically proficient workers required for research and key manufacturing jobs in the defense industrial and technology base. Current enrollment in science and

technical programs is inadequate to support future industry demands. In fact, reports indicate many of our premier educational programs and graduate schools are filled primarily with foreign students who after graduation will take these skills back to their homes. This office should recommend incentives to encourage US student enrollments and incentives for universities to expand technical training and research programs. The OSITT should work to coordinate government, industry, and academic policies that will provide a skilled work force to meet current and future national security needs.

- ♦ conducting a detailed study of the potential harmful effects of foreign involvement in the domestic US banking and financial services industries.

OSITT should develop a comprehensive database and analytic capability. This office must have access to all relevant data wherever it exists within the government. One of the most immediate actions that OSITT must undertake is to conduct an analysis of existing data collection systems/programs and the adequacy of available data. From such analysis, this office should develop and recommend complementary data collection systems to supplement those that do exist and establish new ones as necessary to fill any voids. Interagency cooperation or presidential direction will be needed to assure that, once identified, the data collection systems across the government are established, funded, and operated so as to provide the data necessary for OSITT to carry out its responsibilities.

A FINAL THOUGHT

Virtually every source we have consulted during our research has concluded that the US must reduce its budget and trade deficits, increase domestic savings rates, increase investment in commercial and military R&D, relax or revise existing antitrust laws, rebuild our national transportation infrastructure and, perhaps most importantly, improve the education and productivity of American workers. Clearly, without timely attention to these and other macroeconomic issues, the structural changes and policy recommendations outlined above will afford little hope of preserving or improving our collective well-being.

APPENDIX A
CRITICAL TECHNOLOGIES¹¹⁹

ADVANCED MATERIALS AND MATERIALS PROCESSING - Advanced materials offer a number of different approaches to higher performance and/or lower cost weapons and support systems. In the materials area, high-strength fibers, superconductivity, high-performance ceramics, and organic and metal-matrix composites are on the horizon. Advanced processing includes the creation of new material properties and means for more rapid and economical fabrication of complex shapes. For many military applications, materials are subjected to conditions far more demanding than those found in the industrial sector. For the Army, high-strength, durable materials translate into broad new capabilities ranging from lightweight systems providing increased mobility to significant reductions in equipment failures and downtime, all of which improve field fighting capability and reduce costs. Superconducting materials offer the promise of entirely new electronic systems offering major new capabilities ranging from greatly increased data processing speeds to lightweight motors and generators.

¹¹⁹ Weapon Systems: United States Army (1989), Washington: Government Printing Office, 1989: 2+.

MICROELECTRONICS, PHOTONICS AND ACOUSTICS - Microelectronics is the family of technologies that makes it possible to put ever-increasing electronic capability in ever smaller packages. Photonic and acoustic devices will support further advances, making possible even more complex operations in smaller, less expensive, more dependable electronic systems with greater capability. They will also provide capabilities that are impossible or impractical now. Perhaps the greatest advantages will emerge in systems employing advanced computing power, more stable signals, greater communication capability, more survivability, and increased resistance to outside interference or jamming.

ADVANCED SIGNAL PROCESSING AND PROCESSING - Advanced signal processing involves the technologies for manipulating electronic signals to extract items of interest that would otherwise normally be lost to noise, interference, or jamming. The Army requires receivers that can intercept, identify, and locate future enemy communication and radar transmitters in the presence of many friendly and threat emitters. The majority of these requirements are beyond the areas of interest of industry. Advanced computing has many industrial counterparts and incentives, and the Army is encouraging and closely monitoring industrial efforts in this area. One example is how the Army is exploring supercomputer technology with two supercomputers located at the Ballistic Research Laboratory and one at the Tank Automotive Command. A fourth is being procured for the US Army Engineer Waterways Experiment

Station. The Army High Performance Computing Research Center is to be established at a competitively selected university.

ARTIFICIAL INTELLIGENCE - Artificial intelligence (AI) employs computers and other systems to emulate human processes such as reasoning, analyzing, and recognizing. AI uses facts, rules of thumb, and past experiences to make inferences about the world to recommend a course of action. The demonstrated ability of AI to diagnose and prescribe remedies for diseases and to diagnose electronic and mechanical failures will permit the use of fewer medical and maintenance personnel requiring less training. Commanders' decision-making aids will permit examining more options more rapidly with smaller staffs, enabling us to respond within the enemy's decision-making cycle. AI can help the Army accelerate its pace on the modern battlefield. It can enhance the Army's planning and decision making at many levels, leading to significant increases in force survivability, lethality, agility, and reduced manpower and overhead costs.

ROBOTICS - Robotics is the technology of autonomously functioning systems, which sense the outside world, respond through a set of rules or AI, and control an actuator to achieve a desired purpose. Robots can replace humans in many applications, providing a combat multiplier or reducing the risk of casualties. Some examples include robotic material handlers for logistics and advanced autoloaders for tanks and artillery. Robotic weapon systems will

permit one soldier to do the job of many and, in some instances, may eliminate the need for personnel. Robotic manufacturing will reduce the procurement cost of Army systems.

BIOTECHNOLOGY - Biotechnology offers many unique opportunities for the Army, and its full potential has yet to be assessed. At the outset, this technology can provide the protection sought against chemical and biological agents. Soldier performance may be enhanced by vaccines, truly protective autonomous systems, and the ability to develop small cognitive devices holds much promise. It is also likely that improved understanding of biotechnology will permit the development of processes that can yield new materials, or material at substantially reduced costs.

DIRECTED ENERGY - Directed Energy Weapons (DEW) use lasers, high-powered microwaves, or beams of charged or neutral particles to blind a sensor or to cause instant catastrophic destruction. Directed energy efforts also include protection of US systems against enemy weapons. Laser communications allow very wide bandwidth transmission using very short bursts and narrow beams. Laser radar and communication systems offer security, bandwidth, and other capabilities not available in conventional systems.

POWER GENERATION, STORAGE, AND CONDITIONING - Power generation/storage/conditioning technologies enable generation and delivery of electrical power of the right quality and quantity at the time it

is needed. It includes advanced generators, batteries, controls, and pulse power storage and waveform shaping devices. Batteries that are rechargeable in peacetime but cheap enough to be discarded in wartime are under development, as are batteries with much greater power density, longer shelf life, and better performance at low temperature. Motor generators that are smaller, lighter, and require less maintenance will provide major battlefield advantages. Generators are now a major source of acoustic and thermal signatures of weapons and command posts; enhanced survivability will result from reduction of signatures. Advanced power and load conditioning systems will allow operation of systems with smaller, more efficient generators. The practicality of directed energy weapons and of electromagnetic guns is now limited by the inability to provide very high pulsed power levels in practical systems. This is an area of unique interest to the military. Very compact sources of high power (generators and batteries), storage devices (advanced fly-wheel concepts, fast storage batteries, and advanced capacitors), high-power super-fast switches, and other power manipulation and control devices are needed.

LOW OBSERVABLES - Low observables comprise the technologies that prevent the detection and/or identification by advanced sensors. This capability of rendering targets invisible is achieved by various combinations of materials, design, and operation. Of the many emerging technologies foreseen, this is one that has significant impact on the Army and is least apt to be the subject

of any significant investment by industry. With the advent of smart weapons and the next generation of brilliant weapons, the emphasis on low observables will increase. DEW that minimize the possibility of escape by maneuver will further increase the need for reduced visibility in the battlefield of the future.

ADVANCED PROPULSION - Advanced propulsion technologies apply to rotorcraft, wheeled and tracked vehicles, and missiles. A new DOD/NASA propulsion initiative titled "Integrated High Performance Turbine Engine Technology" was started in FY88 with the objective of doubling aircraft propulsion performance by the year 2000. Improvements of 30 percent in the specific fuel consumption and increased power-to-weight ratio of 80 percent are envisioned. Future combat vehicle propulsion needs are met through advanced designs and technologies stressing the attributes of low volume, high performance, improved fuel economy, and improved supportability. Through ongoing programs, ground combat vehicles in the late 1990s will have propulsion systems that deliver 10 percent more power in half the volume and with fuel economy improvement of 50 percent over the current M1A1 power pack. Advanced missile propulsion performance requires increased thrust and range for the Airland Battle-Future while using insensitive fuels.

SPACE - The ultimate "high ground," space is the logical extension of the battlefield. Space technology and systems merge intelligence, communications, weather, terrain, positioning, and targeting to provide the tactical commander with a comprehensive knowledge of the battlefield.

PROTECTION/LETHALITY - Research and technology activities associated with protection/lethality have been augmented and accelerated by the Army in order to counteract a highly dynamic threat modernization rate with technologically superior future US forces. Protection/lethality encompasses a wide range of critical efforts focused toward exploiting technological opportunities that will provide our future forces with improved survivability and with warfighting capabilities that will exceed the projected threat. These efforts involve exploration and demonstration of technologies addressing armor materials and design, advanced gun propulsion and missile systems, warhead materials and design, insensitive propellants and explosives, precision guidance, and fire control. Gun propulsion technologies being pursued include unicharge, electromagnetic/electrothermal, and liquid propellant. These technologies are being developed to provide significant increase in the launch velocity; reduction in the logistic burden for propellant; and increased rate of fire. Key activities in protection also include chemical/biological defense, smoke, and laser protection.

APPENDIX B
EXPORT ADMINISTRATION ACT OF 1990

101ST CONGRESS
1ST SESSION

S. 1796

IN THE SENATE OF THE UNITED STATES

Mr. GARN (for himself and Mr. HENZ) introduced the following bill; which
was read twice and referred to the Committee on _____

A BILL

To provide authority to regulate exports, to improve the efficiency of export regulation, and to minimize interference with the ability to engage in commerce.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assem-*
3 *bled,*

4 SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

5 (a) SHORT TITLE.—This Act may be cited as the
6 “Export Administration Act of 1990”.

7 (b) TABLE OF CONTENTS.—

TABLE OF CONTENTS

Sec. 1. Short title; table of contents.

Sec. 2. Findings.

Sec. 3. Declaration of policy.

Sec. 4. General provisions.

1 extent of injury to United States industry and the extent of
2 job displacement caused by United States exports of goods
3 and technology to controlled countries. The annual report
4 shall also include a full analysis of the consequences of
5 exports of turnkey plants and manufacturing facilities to
6 controlled countries which are used by such countries to
7 produce goods for export to the United States or to com-
8 pete with United States products in export markets.

9 (f) ANNUAL REPORT OF THE PRESIDENT.—The Presi-
10 dent shall submit an annual report to the Congress estimat-
11 ing the additional defense expenditures of the United
12 States arising from illegal technology transfers, focusing
13 on estimated defense costs arising from illegal technology
14 transfers that resulted in a serious adverse impact on the
15 strategic balance of forces. These estimates shall be based
16 on assessment by the intelligence community of any tech-
17 nology transfers that resulted in such serious adverse
18 impact. This report may have a classified annex covering
19 any information of a sensitive nature.

205 136-15033(04)0179-2(0179)24-VOL 34 NO 10 E, G, H

21 (a) ESTABLISHMENT AND PRINCIPAL OFFICER.—

(1) IN GENERAL.—There is established as an independent agency in the executive branch the Office of Strategic Trade and Technology. The Office shall be headed by a Director who shall be appointed by

1 the President, by and with the advice and consent of
2 the Senate. The Director shall exercise all of the ex-
3 ecutive and administrative functions and authorities
4 conferred in or transferred to the Office of Strategic
5 Trade and Technology by this Act.

6 (2) FUNCTIONS.—The Director is the President's
7 principal adviser on United States strategic trade and
8 technology policy. The Director—

9 (A) chairs the Strategic Trade Policy Coun-
10 cil;

11 (B) is responsible for implementing export
12 control policies established by the Director and
13 approved by the Strategic Trade Policy Council,
14 for managing dual-use and munitions licensing
15 systems, and for export compliance, to the
16 extent provided by this Act; and

17 (C) serves as a member of committees, of-
18 fices, and agencies with responsibility for ensur-
19 ing the economic security of the United States,
20 including the Competitiveness Policy Council
21 established pursuant to subtitle C of title V of
22 the Omnibus Trade and Competitiveness Act of
23 1988, the Committee for Foreign Investments in
24 the United States, and the Trade Policy Com-

1 mittee established pursuant to section 242 of the
2 Trade Expansion Act of 1962.

3 (b) STRATEGIC TRADE POLICY COUNCIL.—

4 (1) ESTABLISHMENT.—There is established the
5 Strategic Trade Policy Council. The Director of the
6 Office of Strategic Trade and Technology shall chair
7 the Council.

8 (2) MEMBERSHIP.—The Council shall be com-
9 prised of—

10 (A) the Director,

11 (B) the Secretary of State,

12 (C) the Secretary of Defense,

13 (D) the Secretary of Commerce,

14 (E) the Secretary of Treasury,

15 (F) the United States Trade Representative,

16 and

17 (G) the Director of Central Intelligence.

18 A member of the Council under the preceding sen-
19 tence may designate the deputy head of the agency
20 to serve in his or her absence as a member of the
21 Council. The Director shall also invite representa-
22 tives from other offices and agencies as appropriate
23 to the issues under consideration.

1 (3) VOTING.—The members listed in paragraph
2 (2) shall be voting members of the Council, and all
3 decisions shall be made by majority vote.

4 (4) FUNCTIONS.—The Council shall approve
5 export control and technology transfer policies. In
6 carrying out its responsibility, the Council shall—

7 (A) advise the Director on the compilation
8 and streamlining of the United States and
9 COCOM control lists; and

10 (B) resolve technology transfer issues arising from all bilateral defense, coproduction, and
11 strategic trade agreements.

12 (5) DISPUTE RESOLUTION.—

13 (A) IN GENERAL.—If any member of the
14 Council objects to an action of the Director in
15 implementing policies approved by the Strategic
16 Trade Policy Council, the Council shall approve
17 or disapprove the proposed action and notify the
18 Director of its approval or disapproval within
19 10 working days of the objection being raised.
20 Failure of the Council to take its action and
21 provide notice shall be deemed to constitute approval of the Director's proposed action. Upon
22 any such approval, the Director may take final
23
24

1 action in accordance with the proposal, except
2 as provided in subparagraph (B).

3 (B) APPEALS.—Any member of the Council
4 may request the President to review a proposed
5 action of the Council or of the Director (in any
6 case where the Council has failed to take its
7 action and provide notice as provided in sub-
8 paragraph (A)). Not later than 20 days after re-
9 ceipt of such a request, the President shall ap-
10 prove or disapprove the proposed action and
11 notify the Council and the Director of such
12 action. Failure of the President to notify the
13 Council and the Director as required by this
14 paragraph shall constitute concurrence with the
15 proposed action submitted for review to the
16 President.

17 (6) ISSUANCE OF REGULATIONS.—The Director
18 may issue such regulations as are necessary to carry
19 out the provisions of this Act. Any such regulations
20 issued to carry out the provisions of section 5(a),
21 6(a), 7(a), or 8(b) may apply to the financing, trans-
22 porting, or other servicing of exports and the partici-
23 pation therein by any person. The Director shall
24 report to the Committee on Banking, Housing, and
25 Urban Affairs of the Senate and the Committee on

1 Foreign Affairs of the House of Representatives on
2 the intent and rationale of such regulations and any
3 amendments. Such report shall evaluate the cost and
4 burden to United States exporters of the proposed
5 regulations or amendments in relation to any en-
6 hancement of licensing objectives.

7 (7) CONDUCT OF MEETINGS.—The Council shall
8 not be subject to section 552b of title 5, United
9 States Code.

10 (c) STRUCTURE OF AGENCY.—

11 (1) DEPUTY DIRECTOR.—The Director shall be
12 assisted by a Deputy Director, to be appointed by the
13 President, by and with the advice and consent of the
14 Senate. The Deputy Director shall supervise the day-
15 to-day operations of the Office, and coordinate the
16 activities of the Office.

17 (2) ASSOCIATE DIRECTORS.—There shall be in
18 the Office—

19 (A) an Associate Director for Export Ad-
20 ministration;

21 (B) an Associate Director for Economic
22 Security; and

23 (C) an Associate Director for Non-Prolif-
24 eration,

1 to be appointed by the President, by and with the
2 advice and consent of the Senate.

3 (3) FUNCTIONS OF ASSOCIATE DIRECTORS.—

4 (A) ASSOCIATE DIRECTOR FOR EXPORT AD-
5 MINISTRATION.—The Associate Director for
6 Export Administration shall carry out the Of-
7 fice's responsibilities with respect to—

8 (i) licensing and list review processes
9 and policies;

10 (ii) national security export control
11 policies;

12 (iii) the United States munitions list
13 export control policies pursuant to section
14 38 of the Arms Export Control Act; and

15 (iv) such other matters as the Director
16 may specify.

17 (B) ASSOCIATE DIRECTOR FOR ECONOMIC SE-
18 CURITY.—The Associate Director for Economic
19 Security shall carry out the Office's responsibil-
20 ities with respect to—

21 (i) monitoring foreign direct invest-
22 ments in the United States and advising the
23 President, the Committee on Foreign In-
24 vestment in the United States, and other
25 appropriate officials on acquisitions of

1 United States firms that would adversely
2 affect the national security of the United
3 States;

4 (ii) the Defense Production Act of
5 1950;

6 (iii) the health of the United States in-
7 dustrial base;

8 (iv) imports threatening the national
9 security of the United States under section
10 232 of the Trade Expansion Act of 1962;

11 (v) short supply policy; and

12 (vi) such other matters as the Director
13 may specify.

14 (C) ASSOCIATE DIRECTOR FOR NON-PROLIF-
15 ERATION.—The Associate Director for Non-Pro-
16 liferation shall carry out the Office's policy re-
17 sponsibilities with respect to—

18 (i) the Missile Technology Control
19 Regime (MTCR);

20 (ii) chemical and biological weapons
21 export controls and proliferation issues;

22 (iii) the implementation of United
23 States foreign policy export control poli-
24 cies; and

1 (iv) such other matters as the Director
2 may specify.

3 (4) CHIEF NEGOTIATOR.—There shall be in the
4 Office a Chief Negotiator, who shall hold the rank of
5 ambassador. The Chief Negotiator shall be appointed
6 by the President, by and with the advice and consent
7 of the Senate. The Chief Negotiator shall be respon-
8 sible for the development, coordination, and conduct
9 of all international strategic trade negotiations, in-
10 cluding COCOM, the Third Country Initiative, the
11 Missile Technology Control Regime, and chemical
12 and biological weapons control regimes.

13 (d) OFFICE OF INDUSTRY ADVISORY COMMITTEES.—

14 (1) IN GENERAL.—There shall be in the Office
15 an Office of Industry Advisory Committees to pro-
16 vide industry representation and advice. The Office
17 of Industry Advisory Committees shall be headed by
18 a Chair, who shall be the Chairman of the Presi-
19 dent's Export Council Subcommittee on Export Ad-
20 ministration, and who shall be appointed by the
21 President.

22 (2) FUNCTIONS.—The Chair shall—

23 (A) advise the Director on issues relating
24 to export controls, particularly on technical mat-
25 ters relating to control list revisions;

1 (B) coordinate the activities of the industry
2 advisory committees; and

3 (C) report directly to the Director on the
4 activities of the industry advisory committees.

5 The Chair shall not be a member of the Strategic
6 Trade Policy Council. The industry advisory commit-
7 tees shall be represented in COCOM deliberations,
8 including list review.

9 (3) SUPPORT.—The Office shall receive appro-
10 priate administrative support from the Office of Stra-
11 tegic Trade and Technology, including office space,
12 equipment, and supplies. Salaries and expenses for
13 members of the industry advisory committees shall
14 be the responsibility of industry, and not the United
15 States Government.

16 (e) COMPENSATION.—

17 (1) DIRECTOR.—Section 5312 of title 5, United
18 States Code, is amended by adding at the end the
19 following:

20 “Director, Office of Strategic Trade and Tech-
21 nology.”.

22 (2) DEPUTY DIRECTOR.—Section 5313 of title 5,
23 United States Code, is amended by adding at the end
24 the following:

1 “Deputy Director, Office of Strategic Trade and
2 Technology.”.

3 (3) ASSOCIATE DIRECTORS.—Section 5314 of title
4 5, United States Code, is amended by adding at the
5 end the following:

6 “Associate Directors, Office of Strategic Trade
7 and Technology.”.

8 (4) OTHER OFFICERS.—Section 5315 of title 5,
9 United States Code, is amended by adding at the end
10 the following:

11 “Chief Negotiator, Office of Strategic Trade
12 and Technology.

13 “General Counsel, Office of Strategic Trade
14 and Technology.

15 “Assistant Directors, Office of Strategic Trade
16 and Technology.”

17 (f) TRANSFERS OF FUNCTIONS.—

18 (1) TRANSFERS TO DIRECTOR.—In addition to au-
19 thorities and responsibilities elsewhere provided for
20 in this Act, there are transferred to the Office of
21 Strategic Trade and Technology the following func-
22 tions and authorities:

23 (A) those of the Office of Munitions Con-
24 trol of the Department of State with respect to

1 the munitions list pursuant to the Arms Export
2 Control Act;

3 (B) those of the Defense Technology Secu-
4 rity Administration of the Department of De-
5 fense;

6 (C) those of the Department of Commerce
7 under the Export Administration Act of 1979;

8 (D) all authorities under the Defense Pro-
9 duction Act of 1950;

10 (E) all authorities under section 232 of the
11 Trade Expansion Act of 1962; and

12 (F) such other functions and authorities,
13 not specifically or otherwise vested or delegated
14 by statute, as the Director, in consultation with
15 the Director of the Office of Management and
16 Budget, determine to be appropriate.

17 (2) INCIDENTAL TRANSFERS.— The Director of
18 the Office of Management and Budget, in consulta-
19 tion with the Director, is authorized and directed to
20 make such determinations as may be necessary with
21 regard to the transfer of functions which relate to or
22 are utilized by an agency, commission, or other
23 body, or component thereof affected by this Act, to
24 make such additional incidental dispositions of per-
25 sonnel, assets, liabilities, contracts, property, records,

Works Consulted

- "A Japanese Strategy for Boeing." New York Times 3 Nov. 1989: 2.
- Aho, C. Michael., and Marc Levinson. After Reagan: Confronting the Changed World Economy. Washington: Kramer Books, 1989.
- Allen, Deborah, and John Rutledge. "We Should Love the Trade Deficit." Fortune 29 Feb. 1988: 125-126.
- Almond, Peter. "DOD Told to Shift Far East Strategy." Washington Times 8 Nov. 1989: 2+.
- "As Cold War Ends, Will Savings Rise?" Wall Street Journal 27 Nov. 1989: A1+.
- Atwood, Donald. "Assessing the Defense Industrial Base." Defense Business 11 Sep. 1989: B1-B3.
- Augustine, Norman. "US Credibility and Viability in Worldwide Competition." Vital Speeches of the Day 1 Sep. 1989: 690+.
- Backman, Jules. The Economics of Armament Inflation. New York: Rhinehart and Company, 1951.
- Barton, William B., and Krista L. Peterson. "Foreign Investment Trouble For Defense Firms?" National Defense Sep. 1989: 52-53.
- . "Industrial Security Clearances: Heightened Importance in a World of Corporate Acquisitions, Takeovers and Foreign Investment." Public Contract Law Journal Mar. 1989: 392-413.
- Belanger, Brian. "Corporate Nationality and Its Implications for Participation in DOC Programs." Issue Paper, 2 Oct. 1989.
- Blados, Walter R. "Controlling Unclassified Scientific and Technical Information." Information Management Review Spring 1987: 49-60.
- Bryant, John. "Why Congress Cares About Foreign Investment." International Economy May/June 1988: 26.
- Buell, Barbra and Mike McNamee. "Why Banks Fear Congress' Help." Business Week 14 Sep. 1987: 35.
- "Business Bulletin." Wall Street Journal 9 Mar. 1990: 1.

"Business, Economics, and the Oval Office: Advice to the New President and Other CEOs." Harvard Business Review Nov.-Dec. 1988: 65+.

Burgess, John., and Evelyn Richards. "Congressional Group Fears Cuts in High-Tech Research." Washington Post 16 Nov. 1989: E7.

Callaghan, Thomas A. Jr. Pooling Allied and American Resources To Produce A Credible, Collective Conventional Deterrent. DOD Contract Report, MDA903-84-C-0274, Aug. 1988.

Canner, Stephen. Personal interview. 11 Nov. 89.

---. "US Investment Policy and Exon-Florio." Lecture. Washington, 25 July 1989.

"Carla Hills, Trade Warrior." Business Week 22 Jan. 1990: 55.

Carlucci, Frank C. Report of the Secretary of Defense to the Congress on the Amended FY 1988/FY 1989 Biennial Budget. Washington: Government Printing Office, 1988.

"Chipmakers Suffer Delusions of Middle Age." Economist 1 July 1989: 53-54.

"China ordered to sell US firm: National security reasons cited." Boston Globe 3 Feb. 1990: 2.

Clukey, Gary. The United States Economic Relationship With Japan: Implications For U.S. Security. Study Project, 1989. US Army War College, Carlisle Barracks, PA.

"Curb Seen on Pentagon." New York Times 8 Nov. 1989: D6.

Cobbs, Ann Scales. "Dixon Raps Production of Jets with S. Korea." St. Louis Post-Dispatch 16 Oct. 1989: 3.

Curran, John J., "What Foreigners Will Buy Next." Fortune 13 Feb. 1989: 94-98.

Defense Public Advisory Committee on Trade. Foreign Ownership of Defense-Related Industries. Issue Paper, Sep. 1988.

Deterrence in Decay: The Future of the U.S. Defense Industrial Base. Washington: Center for Strategic and International Studies, 1989.

Dillon, Kenneth J. Japanese Investment in the United States. Center Paper, Sep. 1989. Center for the Study of Foreign Affairs, US Department of State.

Duffy, Carolyn. "DoD Urged to Fund Commercial Technologies." Washington Technology 20 Apr. 1989: 1+.

Dvorak, John C. "Inside Track." PC Magazine 12 Dec. 1989: 75.

Edelman, Lawrence. "Policy Paralysis." Boston Globe 3 Dec. 1989:1+

"Executives Cite Erosion of Defense Industry Base." Aviation Week and Space Technology 24 Nov. 1986: 68-69.

Exon, Jim. "Exon Concerned About Increased Foreign Investment in US." Press Release, 12 Apr. 1989. Washington.

---. "Exon Oks Regulations of Exon-Florio Foreign Takeover Law." Press Release, 17 July 1989. Washington.

"Exon-Florio: US Power to Block Foreign Acquisitions." International Financial Law Review Apr. 1989.

Farr, Charles M., and Thomas P. Griffin. "The FSX Debate: Implications for Future U.S. International Armaments Program." Program Manager July-Aug. 1989: 2-13.

Fierman, Jaclyn. "The Selling Off of America." Fortune 22 Dec. 1986: 44-56.

---. "The Selling Off of America, contd." Fortune 23 May 1988: 54-64.

"Five Ways to Fight Back." Newsweek 9 Oct. 1989: 68+.

Forbes, M.S., Jr. "Unfounded Fear." Forbes 13 June 1988: 25.

"Foreign Buyers Help, and Not Hurt, the US." Wall Street Journal 9 Oct. 1989: A1+.

"Foreign Direct Investment in a Global Economy." Department of State Bulletin June 1989: 32-34.

Fulghum, David. "Report: Production Woes Threaten Mobilization." Air Forces Times 10 Oct. 1988: 35+.

Gansler, Jacques S. Affording Defense. Cambridge: MIT Press, 1989.

---. "Strengthening America's Industrial Base." Testimony Before the Senate Banking Committee on the Renewal of the Defense Production Act. 1 Mar. 1990.

Glickman, Norman J., and Douglas P. Woodward. The New Competitors. New York: Basic Books, 1989.

Habberton, Eugenia F. Personal interview. 12 Nov. 1989.

Hanson, Mark. L. "The Regulation of Foreign Direct Investment in the United States Defense Industry." Northwestern Journal of International Law and Business 1989: 660+.

Harpainter, Robert E. Defense VS. Development Risks in Exporting Technology. Student Essay, 1975. US Army War College, Carlisle Barracks, PA.

"Heard on the Street." Wall Street Journal 21 Sep. 1989: 1.

Heinz, John. "Export Administration Act of 1990." Statement introducing act to US Senate. 25 Oct. 1989.

Herr, W.K. Personal interview. 12 Nov. 1989.

"High-tech jingoism." Economist 1 July 1989: 14.

Horiguchi, Robert Y. "Now a Soviet semi-conductor scandal." Pacific Defence Reporter Sep. 1989: 51.

Huntington, Samuel P. "No Exit: The Errors of Endism." Parameters Dec. 1989: 93-97.

"Japan's Appetite for US Mergers." New York Times 27 July 1989: 1.

"Japan's Trading Giants Look to the Year 2000." Wall Street Journal 31 Mar. 1986: 1+.

"Japanese Takeover Artists Are Learning Fast." Business Week 3 Aug. 1987: 40-41.

Johnson, Keith N. "The Growing Foreign Role in U.S. Policy." Fortune 6 July 1987: 36-38.

Kapstein, Ethan B. "From Guns to Butter in the USSR." Challenge Sep-Oct. 1989.

---. "Losing Control: National Security and the Global Economy." The National Interest Winter, 1989/90.

Kendall, Donald M. International Trade and Economic Development. Guest Speaker, Republican Governors Conference. C-SPAN Productions, 18 Nov. 1989.

Koretz, Gene. "The Buying of America: Should We Be Worried?" Business Week 9 May 1988: 36.

Lehman, John. Personal interview. 12 Dec. 1989.

Leopold, George. "Report on Soviets Looks at Challenges from Allies, Too." Defense News Nov. 1989: 1+.

- Libiciki, Martin C. What Makes Industries Strategic? Washington: Institute for National Strategic Studies, Nov. 1990.
- Libicki, Martin C., Jack Nunn, and Bill Taylor. US Industrial Base Dependence/Vulnerability: Phase II-Analysis. Washington: National Defense University, Nov. 1987.
- Lifeline in Danger: An Assessment of the United States Defense Industrial Base. Arlington, VA: Aerospace Education Foundation, 1988.
- Linke, Steven R. Personal interview. 12 Nov. 1989.
- McNamee, Mike. "Why Banks Fear Congress' Help: A Protectionist Bill Could Backfire." Business Week 14 Sep. 1987: 35.
- Mitchell, Cynthia. "Pentagon Eases Stand Against Foreign Stakes in US Defense Firms." Wall Street Journal 28 Apr. 1988: 1+.
- Moran, Theodore H. The Globalization of America's Defense Industries: What Is the Threat? How Can It Be Managed? Ms. Georgetown University, Sep. 1989.
- "Mosbacher Says US Is Getting Raw Deal on the FSX Fighter." Investor's Daily 15 Sep. 1989: 4.
- Nasar, Sylvia. "Fomenting Fears of Flush Foreigners." Fortune 28 Feb. 1988: 122-124.
- Nulty, Peter. "Riding the Foreign Takeover Wave." Fortune 11 Apr. 1988: 117-118.
- Olivier, D. Wall Street Journal 30 Jan. 1987: 22.
- Omestad, Thomas. "Selling Off America." Foreign Policy Fall 1989: 119-141.
- Passell, Peter. "Trade Law's Tangled Web." New York Times 8 Nov. 1989: D1.
- Phillips, David Morris. "Foreign Investment in the United States: The Defense Industry." Boston University Law Review 1976: 843-906.
- Pine, Art. "Senate Fails to Override Bush on FSX Plane." Los Angeles Times 14 Sep. 1989: 6.
- Pollack, Andrew. "US Aid Sought for Electronics." New York Times 8 Nov. 1989: D1+.
- Prestowitz, Clyde V., Jr. Personal interview. 17 Nov. 1989.

---. Trading Places. New York: Basic Books, 1989.

Porter, Micheal E. Competitive Advantage of Nations. New York: Free Press, 1990.

---. "Why Nations Triumph." Fortune 12 Mar. 1990: 94-108.

Raun, Laura. "Philips Plan HDTV Tubes Plant in US." Financial Times 7 Dec. 1989: 1+.

Reagan, Ronald. National Security Strategy of the United States. Washington: Pergamon-Brassy, 1984.

"Regulations Pertaining to Mergers, Acquisitions, and Takeovers by Foreign Persons, Proposed Rules" (31 CFR Part 800). Federal Register 54:134 (14 July 1989) pp. 29744-29755.

Reich, Robert B. "Who is Us." Harvard Business Review 1990: 60+.

Richards, Evelyn., and John Burgess. "Congressional Group Fears Cuts in High-Tech Research." Washington Post 16 Nov. 1989: E7+.

Richman, Lewis S. "How America Can Triumph." Fortune 18 Dec. 1989: 66.

Riddell, Peter. "US industry is in deep trouble, Congress told." London Financial Times 1 Mar. 1990: 1.

Rosenberg, Joyce M. "Are foreigners buying up too much of U.S.?" The Sun [Lowell, Mass.] 8 Oct. 1989: D1-D3.

Rougelot, Rodney S. Lecture to Committee on Science, Space, and Technology, US House of Representatives, 20 June 1989.

Samuel, Howard D. "Foreign Investment in the US: A Labor View." Looking Ahead May 1989: 1-5.

Samuels, Richard J., and Benjamin C. Whipple. "The FSX and Japan's Strategy for Aerospace." MIT Technology Review Oct. 1989: 42+.

Sanger, David E. "Boeing Seeks a Deal with the Japanese to Build New Plane." New York Times 31 Oct. 1989: D1.

Scalesinger, Jacob M. "US-Japan FSX Venture Boggling Down as Firms Bicker over Technology Rights." Wall Street Journal 5 Oct. 1989: 25.

Schwartz, Bernard L. "Foreign Ownership of U.S. Defense Companies: Where Do We Draw the Line?" Army Aug. 1989: 29-34.

- Sharpe, William F., and Gordon J. Alexander. Investments. Prentice Hall: 1990 155.
- Silverberg, David. "Defense Industry Comes to Know, Often Dread, Power of CFIUS." Defense News 18 Sep. 1989: 40-41.
- . "Senate Likely to Extend Current Export Administration Act 1 Year." Defense News 5 Mar. 1990: 13.
- Simon, Jane Fitz. "Swiss firm to buy US biotechnology giant." Boston Globe 3 Feb. 1990: 1+.
- Smith, Lee. "Fear and Loathing of Japan." Fortune 26. Feb 1990: 50.
- Soloman, Anthony. "America Turns Inward." International Economy May/June 1988: 24-32.
- Stelzer, Irwin. "Put foreign ownership of U.S. assets in perspective." Boston Herald 6 Nov. 1989: 31.
- Stevenson, Richard W. "Foreign Role Rises in Military Goods." New York Times 23 Oct. 1989: 1.
- Terino, John G. "Takeovers, Mergers, Acquisitions: A Threat to America's Defense Capability?" National Defense July/Aug. 1989: 44-61.
- Tolchin, Martin. "Foreigners Investing: A Warning." New York Times 22 Feb. 1988: D1.
- Tolchin, Martin, and Susan Tolchin. Buying into America. New York: Random House, 1989.
- Torres, Craig. "Investment Bankers Aim at Defense Stocks in Their Search for Possible Takeover Targets." Wall Street Journal 20 Sep. 1989: C2.
- "Trade and Competitiveness Act" (PL 100-148, 23 Aug. 1988). United States Statutes at Large 102. pp. 1425-1426.
- Tuchman, Barbra. To March of Folly. New York: A. Knopf, 1984.
- Uchitelle, Louis. "A Japanese Strategy for Boeing." New York Times 3 Nov. 1989: D1-D2.
- "U.S. Attitudes Toward Foreign Investment." International Economy May/June 1988: 28-29.
- "US Leaders Cite Need for Technology Plan." Aviation Week and Space Technology 2 Oct. 1989: 28.
- United States. Cong. Rec. 27 Apr. 1988: S4833-S4835.

- . ----. 22 May 1985: S6756-S6766.
- . ----. 20 Oct. 1989: S13803+.
- . Department of State. Foreign Direct Investment in a Global Economy, March 1989 Washington: Government Printing Office, 1989.
- . GAO. Foreign Investment: Foreign Hostile Takeovers of US Firms. Dec. 1988. Washington: Government Printing Office, 1989. (GAO/NSIAD-89-80FS).
- . ----. Industrial Base: Adequacy of Information on the US Defense Industrial Base. Nov. 1989. Washington: Government Printing Office, 1990. (GAO/NSIAD-90-48).
- . ----. Industrial Base: Defense-Critical Industries. Aug. 1988. Washington: Government Printing Office, 1988. (GAO/NSIAD-88-192BR).
- . ----. International Trade Issues. Nov. 1988. Washington: Government Printing Office, 1988. (GAO OCG 895TR).
- . House. 101st Congress, 1st Session. H.R. 5, A Bill to Provide for the Registration of Foreign Interests in United States Property, and for Other Purposes. Washington: Government Printing Office, 1989.
- . ----. Committee on Banking, Finance and Urban Affairs. Mergers and Acquisitions--Foreign Investments in the United States Hearing 21 Oct. 1987 (Serial No. 100-38). Washington: Government Printing Office, 1988. (78-558).
- . ----. Committee on Energy and Commerce. Foreign Takeovers and National Security Hearing, 20 Oct. 1987. Washington: Government Printing Office, 1988.
- . ----. Committee on Foreign Affairs. Foreign Investment in the United States Hearing, 22 Sep. 1988. Washington: Government Printing Office, 1989. (H381-48).
- . ----. Committee on International Relations. International Investment Survey Act of 1976 (H. Rpt.94-1490). Washington: Government Printing Office, 1977. (H463-23).
- . ----. Committee on Science, Space, and Technology. Monitoring Technology Flow: Science, Technology and Trade Policy Implications Hearing, 10 Dec. 1987 (No. 89). Washington: Government Printing Office, 1988. (H701-641).

- . ---. Defense Industrial Base Panel of the Committee on Armed Services. The Ailing Industrial Base: Unready for Crises. 1980: 43-44.
 - . 1988 Presidential Task Force on Market Mechanisms. Washington: Government Printing Office, 1988.
 - . Senate. 101st Congress, 1st Session. S.1976. Export Administration Act of 1990. Washington: Government Printing Office, 1989.
 - . ---. Committee on Armed Forces. Manufacturing Capabilities of Key Second-Tier Defense Industries Hearing, 23 July 1987. Washington: Government Printing Office, 1988.
 - . ---. Committee on Armed Forces. Department of Defense Authorization for Appropriations for Fiscal Year 1989 Hearings, 18, 29, 30 Mar.; 13, 14 Apr. 1988 (S. Hrg. 100-790, Pt 7). Washington: Government Printing Office, 1988. (S201-8).
 - . ---. Committee on Commerce, Science, and Transportation. Technology Competitiveness Act of 1987 (S. Rpt.100-80). Washington: Government Printing Office, 1988. ---. Department of Defense. Bolstering Defense Industrial Competitiveness. Washington: Government Printing Office, 1988.
 - . ---. Final Report of the Defense Science Board 1988 Summer Study on The Defense Industrial and Technology Base (Vol. I-October 1988 & Vol II-December 1988). Washington: Government Printing Office, 1988.
 - . ---. Report of Defense Science Board Task Force on Defense Semiconductor Dependency, February 1987. Washington: Government Printing Office, 1987.
 - . ---. Soviet Military Power: Prospects For Change, 1989. Washington: Government Printing Office, Sep. 1989: 132-139.
 - . ---. The Technology Security Program: A Report to the 99th Congress. Washington: Government Printing Office, 1986.
 - . White House. Presidential Task Force on Market Mechanisms. January 1988.
- Wetzstein, Cheryl. "Businessmen wary of foreign investors." Washington Times 15 Nov. 1989: C3.
- Weapon Systems: United States Army (1989), Washington: Government Printing Office, 1989.

"When Japan Gets the Jitters, the World Trembles." Business Week 12
Feb. 1990: 25.

"Why Foreign Investment in U.S. Is Good for Us." New York Times
8 June 1988: A38.

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